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NACC Uniform Data Set (UDS)

CODING GUIDEBOOK

(Version 1.2, March 2006)

NOTE: Version 1.2 is NOT the most current version of the UDS forms and is no longer used for data submission. For the most current version, please visit http://www.alz.washington.edu.

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The National Alzheimer's Coordinating Center (NACC)
Uniform Data Set (UDS) Coding Guidebook

This guidebook contains procedures to be followed when completing the data forms prepared for the Uniform Data Set (UDS) by the National Alzheimer's Coordinating Center (NACC): Walter A. Kukull, PhD (*Director*); Thomas Koepsell, MD MPH; Duane Beekly, BS; Erin Pfeiffer Ramos, MPH; Mary Lovely; Woodrow Dietrich, BS; Mary Jacka; Janene Hubbard; Maggie Connor, BS; Andrew Zhou, PhD; Lily Zhang, PhD; Joylee Wu, MS; William Lee, PhD.

These guidelines have been reviewed and approved by the Alzheimer's Disease Centers (ADC) Clinical Task Force: John C. Morris, MD, Washington University (*Task Force Chair*); Helena Chui, MD, University of Southern California; Jeffrey L. Cummings, MD, University of California Los Angeles; Charles DeCarli, MD, University of California Davis; Steven H. Ferris, PhD, New York University; Norman Foster, MD, University of Michigan; Douglas Galasko, MD, University of California San Diego; Neill Graff-Radford, MD, Mayo Clinic Jacksonville; Elaine Peskind, MD, University of Washington; Sandra Weintraub, PhD, Northwestern University.

Introduction

The Clinical Task Force first convened in October 2002, to begin the process of improving the Minimum Data Set (MDS), to which all Alzheimer's Disease Centers (ADCs) contribute uniform and standardized data to NACC on ADC participants. The UDS is not hypothesis-driven; rather, it is designed to foster hypothesis-generating studies and, where appropriate, to test specific research questions. **The mission of this new data set, hereby named the Uniform Data Set (UDS), is to expand the MDS; standardize clinical and cognitive data on all ADC participants with uniform clinical assessments and diagnoses; provide data to support current research initiatives (e.g., the NIA's Genetics Initiative); and stimulate and facilitate future collaborative research**.

As a starting point, the Task Force focused on nondemented control individuals and those with mild cognitive impairment (MCI) and mild Alzheimer's disease (AD) as diagnostic criteria and assessment protocols that are reasonably commonly shared across the ADCs are available for these heavily studied groups. The Task Force appreciates that the UDS will evolve as time and experience dictate. Moreover, additional standard assessments and criteria will need to be developed for more advanced stages of AD, as well as for non-AD disorders such as vascular dementia, dementia with Lewy bodies, frontotemporal lobar degenerations, and others. Furthermore, we need to incorporate translations (such as Spanish) for non-English speaking participants.

Several principles and assumptions were adopted:

1. The UDS must contain sufficient data to be useful as a research database, but at the same time it cannot represent an unacceptable burden to participants or the ADCs. Whenever possible, the UDS capitalizes on criteria, measures, and scales already administered by the majority of ADCs.
2. Assessments of all ADC participants, including nondemented controls, will include informant interviews.
3. Assessments will be obtained annually whenever possible, so that the UDS is a longitudinal database.
4. A standardized database requires all items to be collected in a uniform manner to minimize variability. Quality control necessitates that any item "mapped" from a separate protocol must be able to be traced back to the original collection and be obtained in a valid manner. Any item to be mapped from an existing ADC protocol to the UDS must be approved by the Clinical Task Force.

The Task Force recommends that the UDS be administered as a standard protocol, separate from protocols that have been developed for administration at individual ADCs. The ADCs may continue to separately administer their site specific protocols to maintain fidelity with data collected prior to the implementation of the UDS and to address research questions that are not addressed by the UDS.

Beginning in October 2002, the Task Force, over an 18-month period, developed and revised the individual clinical and cognitive variables that constitute the UDS; these were approved by the ADC Directors in April 2004. The Task Force then worked closely with NACC to develop the UDS data forms and guidebook to ensure standardization of the

criteria and administered items for the database. Throughout this entire process, the Task Force received helpful input not only from the ADC Directors but also the Clinical Core Leaders, data managers, and many other interested individuals. The Chair of the Task Force wishes to thank all who provided suggestions and comments, as well as the superb NACC team responsible for developing the forms and supporting materials, and especially the Task Force members who worked so diligently and effectively in creating this UDS.

Typographical Conventions

Instructions will appear as a sans serif font against a shaded background... sample text.

General Instructions for All Forms

1. Complete the following required information in all form headers:

   Center:.....Enter the name of the ADC.

   ADC Subject ID:.....Enter the subject ID used at the ADC. This is the same as the Minimum Data Set (MDS) Patient ID (PTID), if the subject was enrolled in the NACC MDS.

   Visit Date:.....Enter the date that each form was completed at the ADC (mm/dd/yyyy). The visit date on Form A1 should correspond to the first day of the subject's visit. If the visit takes several days to complete, the visit date for each form should reflect the date it was completed. For example, if a subject was first seen on January 1, 2006 and forms A1 through B9 were completed, but forms C1 and D1 weren't completed until January 5, 2006, then the visit date should be entered as "01/01/2006" for forms A1 through B9, and the visit date for forms C1 and D1 should be entered as "01/05/2006".

   ADC Visit #:.....Enter the visit number assigned at the ADC.

   Examiner's initials: .....Enter the initials for the examiner specified in the form instructions. ("Clinician" includes physicians, PAs, RNs, psychologists, psychometrists and other health professionals specifically trained/certified for patient evaluation or treatment. "ADC staff" refers to any non-clinician at the ADC, typically with some experience conducting research interviews with the specific data collection instrument.)

2. Provide only one answer per question, unless instructed otherwise.

3. Many items include "unknown" as a response category. Use this code only if the respondent is unable or unwilling to provide information that would allow a more specific response.

Informants are expected for all case and control subjects enrolled in the UDS. Please do your best to identify a reliable informant for the subject. If a local informant is not available, you can contact a long-distance informant. The informant must be one individual (not a group of friends or family members) who is considered the "best" source of information available on the subject. However, in very exceptional instances (e.g., if the subject refuses to supply an informant or there is no information available), the subject can still be enrolled.

NACC expects and intends that all UDS forms will be attempted on all subjects, but we realize this may be impossible when the patient is terminally ill, or when there is no informant, or for other reasons. NACC requires that Forms Z1, A1, A5, B4, B9, C1, D1, and E1 be submitted for a subject to be included in the UDS database, even though these forms may include some missing data.

For forms not designated as required, if it is not feasible to collect all or almost all of the data elements for a subject and the ADC therefore decides not to attempt to collect those data, an explanation must be provided. Please indicate this decision on Form Z1 by including the appropriate explanatory code and any additional comments.

Form Z1: FORM CHECKLIST

The purpose of this form is to report the submission status of all forms in the UDS initial visit packet for each subject.

NACC expects and intends that all UDS forms will be attempted on all subjects, but we realize this may be impossible when the patient is terminally ill, or when there is no informant, or for other reasons. NACC requires that Forms Z1, A1, A5, B4, B9, C1, D1, and E1 be submitted for a subject to be included in the UDS database, even though these forms may include some missing data.

For forms not designated as required, if it is not feasible to collect all or almost all of the data elements for a subject and the ADC therefore decides not to attempt collection of those data, an explanation must be provided. Please indicate this decision below by including the appropriate explanatory code and any additional comments.

KEY: If the specified form was not completed, please enter one of the following codes:

95 = Physical problem
96 = Cognitive/behavior problem
97 = Other problem
98 = Verbal refusal

Form	Description	Submitted: Yes	Submitted: No	If not submitted, specify reason (see Key)	Comments (provide if needed)
A1	Subject Demographics	**REQUIRED**		n/a	n/a
A2	Informant Demographics	☐ 1	☐ 0	__ __	
A3	Subject Family History	☐ 1	☐ 0	__ __	
A4	Subject Medications	☐ 1	☐ 0	__ __	
A5	Subject Health History	**REQUIRED**		n/a	n/a
B1	Evaluation Form – Physical	☐ 1	☐ 0	__ __	
B2	Eval. Form – Hachinski Ischemic Scale	☐ 1	☐ 0	__ __	
B3	Evaluation Form – UPDRS	☐ 1	☐ 0	__ __	
B4	Global Staging – CDR	**REQUIRED**		n/a	n/a
B5	Behavioral Assessment – NPI-Q	☐ 1	☐ 0	__ __	
B6	Behavioral Assessment – GDS	☐ 1	☐ 0	__ __	
B7	Functional Assessment – FAQ	☐ 1	☐ 0	__ __	
B8	Evaluation – Physical/Neurological Exam Findings	☐ 1	☐ 0	__ __	
B9	Clinician Judgment of Symptoms	**REQUIRED**		n/a	n/a
C1	MMSE and Neuropsychological Battery	**REQUIRED**		n/a	n/a
D1	Clinician Diagnosis – Cognitive Status and Dementia	**REQUIRED**		n/a	n/a
E1	Imaging/Labs	**REQUIRED**		n/a	n/a

Check "yes" if the specified form was completed for the subject during the initial visit. If a form is not designated as required and is not submitted, enter the appropriate Key code for the reason and provide a written explanation in the "Comments" section.

Form A1: SUBJECT DEMOGRAPHICS

The purpose of this form is to gather basic descriptive information concerning subjects enrolled in the UDS. The form should be completed by the ADC intake interviewer or clinician, and information should be obtained through ADC scheduling records, subject interview, medical records, and proxy informant report (as needed).

Source of Referral:

1. Subject enrolled in NACC MDS: ☐ 1 Yes ☐ 0 No

Check "yes" if the subject was previously seen in your ADC and was reported to the NACC Minimum Data Set (MDS).

2. Primary reason for coming to ADC: ☐ 1 Participate in research study ☐ 2 Clinical evaluation ☐ 3 Other (*specify*): _____ ☐ 9 Unknown

Check number 1 if the subject was referred, selected/sampled or recruited, or volunteered primarily to be part of a research study affiliated with the ADC or to enroll directly as an ADC research subject.

Check number 2 if the subject was referred by family/friend, self or physician/health care worker, or employer or concerned citizen for a medical assessment because of concerns about the subject's health, cognition, behavior, movements etc.

If there is a circumstance not listed which caused the subject to present at the ADC, check number 3 and enter the reason in the space provided.

Check number 9 only if the respondent is unable or unwilling to provide information that would allow a more specific response.

3. Principal referral source: ☐ 1 Self/relative/friend ☐ 2 Clinician ☐ 3 ADC solicitation ☐ 4 Non-ADC study ☐ 5 Clinic sample ☐ 6 Population sample ☐ 7 Non-ADC media appeal (e.g., Alzheimer's Association) ☐ 8 Other (*specify*): _____ ☐ 9 Unknown

Check number 1 if the subject self-referred or a relative or friend referred him/her to the ADC on their own initiative for evaluation, but <u>not</u> in direct response to an ADC solicitation or recruitment initiative (these options are provided below).

Check number 2 if a clinician of any type referred the subject to the ADC for any reason.

Check number 3 if the subject presented primarily as a volunteer in response to an ADC advertisement or subject recruitment effort.

(continued on next page)

Check number 4 if the subject was previously enrolled or evaluated in a non-ADC study and was subsequently referred to the ADC by that study.

Check number 5 if the subject was identified through a clinic-based screening or sampling mechanism.

Check number 6 if the subject was identified through a community-based screening or sampling mechanism.

Check number 7 if the subject presented primarily as a volunteer in response to a media appeal/advertisement from the Alzheimer's Association or other non-ADC association.

If the subject was referred to the ADC by means other than described in 1 through 7 above, check number 8 and enter the reason in the space provided.

Check number 9 only if the respondent is unable or unwilling to provide information that would allow a more specific response.

4. Presumed disease status at enrollment:

☐ 1 Case/patient/proband

☐ 2 Control/normal

☐ 3 No presumed disease status

This question refers to what the assessment staff presumes the disease status to be at enrollment into the UDS (regardless of whether this is the first or tenth assessment at the Center).

Check number 1 if the subject is thought to have MCI.

Check number 2 if the subject was enrolled because s/he was thought to be cognitively intact (e.g., for comparison with impaired patients), regardless of the eventual outcome of subsequent evaluation.

Check number 3 if the subject was enrolled and it wasn't yet determined if s/he was thought to be a case or control (e.g., for population screening).

5. Presumed participation:

☐ 1 Initial evaluation only

☐ 2 Longitudinal follow-up planned

Check number 1 if the subject was enrolled for a one-time evaluation, with no subsequent follow-up visits planned.

Check number 2 if the subject was enrolled with the intent that s/he would make one or more additional visits after completing an initial evaluation.

6. ADC enrollment type:

☐ 1 Clinical Core

☐ 2 Satellite Core

☐ 3 Other ADC Core/project

☐ 4 Center-affiliated/non-ADC

Check number 1 if the subject is enrolled in the Clinical Core at your ADC.

Check number 2 if the subject is enrolled at a designated Satellite Core at your ADC.

Check number 3 if the subject is enrolled in the ADC, but not through the Clinical or Satellite Core(s).

Check number 4 if the subject is primarily enrolled in, or supported by, another study (not the ADC).

7. Subject's month/year of birth: __ __/__ __ __ __

Based on the best available information from the subject (or informant, if necessary), enter the subject's month and year of birth in the specified numerical format (e.g., March 1920 would be entered as "03/1920").

8. Subject's sex: ☐ 1 Male ☐ 2 Female

Self-explanatory.

9a. Does the subject report being of Hispanic/Latino ethnicity (i.e., having origins from a mainly Spanish-speaking Latin American country), regardless of race?

☐ 1 Yes
☐ 0 No
☐ 9 Unknown

Ask the subject (or informant, if necessary) whether the subject considers her/his ethnicity to be Hispanic/Latino.

9b. If yes, what are the subject's reported origins?

☐ 1 Mexican/Chicano/ Mexican-American/
☐ 2 Puerto Rican
☐ 3 Cuban
☐ 4 Dominican
☐ 5 Central American
☐ 6 South American
☐ 50 Other (*specify*): _____
☐ 99 Unknown

Ask the subject (or informant, if necessary) what s/he considers the subject's origins to be. Read or show the choices, if required, and allow only one category choice.

Check number 1 if the subject reports having origins in Mexico.

Check number 2 if the subject reports having origins in Puerto Rico.

Check number 3 if the subject reports having origins in Cuba.

Check number 4 if the subject reports having origins in the Dominican Republic.

Check number 5 if the subject reports having origins in Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, or Panama.

Check number 6 if the subject reports having origins in Argentina, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, or Venezuela.

Check number 50 if the subject reports origins other than those listed, and enter the origin in the space provided.

Check number 99 only if the subject or informant is unable or unwilling to identify the subject's origins.

10. What does subject report as his/her race?

☐ 1 White
☐ 2 Black or African American
☐ 3 American Indian or Alaska Native
☐ 4 Native Hawaiian or Other Pacific Islander
☐ 5 Asian
☐ 50 Other (*specify*): _____
☐ 99 Unknown

Ask the subject (or, if necessary, the informant) what s/he considers the subject's race to be. Read or show the choices, and allow only one category choice. There will be an opportunity to record other applicable race categories in questions 11 and 12.

Number 4: This includes Native Hawaiian, Guamanian or Chamorro, Samoan, or Other Pacific Islander.

Number 5: This includes Asian Indian, Chinese, Filippino, Japanese, Korean, Vietnamese, or Other Asian.

Check number 50 if the subject reports a race other than those listed, and enter the race in the space provided. If the subject prefers to report his/her race as multiracial, check number 50 and specify "multiracial".

Check number 99 only if the subject or informant is unable or unwilling to identify the subject's race.

11. What additional race does subject report?

☐ 1 White
☐ 2 Black or African American
☐ 3 American Indian or Alaska Native
☐ 4 Native Hawaiian or Other Pacific Islander
☐ 5 Asian
☐ 50 Other (*specify*): _____
☐ 88 None reported
☐ 99 Unknown

If the subject or informant reports an additional race for the subject, check the box that corresponds to this additional race.

Numbers 4 and 5: See previous inclusion list (question 10).

Check number 50 if the subject or informant reports an additional race other than those listed, and enter the race in the space provided.

Check number 88 if the subject or informant reports no additional race for the subject.

Check number 99 only if the subject or informant reports the subject as having an additional race but is unable or unwilling to identify it.

12. What additional race, beyond what was indicated above in questions 10 and 11, does subject report?

☐ 1 White
☐ 2 Black or African American
☐ 3 American Indian or Alaska Native
☐ 4 Native Hawaiian or Other Pacific Islander
☐ 5 Asian
☐ 50 Other (*specify*): _____
☐ 88 None reported
☐ 99 Unknown

If the subject or informant reports another race, in addition to those already indicated in questions 10 and 11, check the box that corresponds to this additional race.

Numbers 4 and 5: See previous inclusion list (question 10).

Check number 50 if the subject or informant reports an additional race other than those listed, and enter the race in the space provided.

Check number 88 if the subject or informant reports no additional race for the subject.

Check number 99 only if the subject or informant reports the subject as having an additional race but is unable or unwilling to identify it.

13. Subject's primary language:

☐ 1 English
☐ 2 Spanish
☐ 3 Mandarin
☐ 4 Cantonese
☐ 5 Russian
☐ 6 Japanese
☐ 8 Other primary language (*specify*):_____
☐ 9 Unknown

Record the language that the subject (or informant) considers to be the subject's main language – i.e., the language that s/he speaks and writes best.

Check number 8 if the subject or informant reports a primary language other than those described, and enter the language in the space provided.

Check number 9 only if the subject or informant is unable or unwilling to identify the subject's primary language.

14. Subject's years of education (report achieved level using the codes below; if an attempted level is not completed, enter the number of years completed). High school/GED = 12; Bachelors degree = 16; Master's degree = 18; Doctorate = 20 years: __ __ (*99 = Unknown*)

This question refers to achieved educational levels, rather than the number of years it took to complete that level. Use the following to describe achieved educational levels: High school or GED = 12 years, Bachelors degree = 16 years, Master's degree = 18 years, Doctorate = 20 years.

If the informant hasn't completed a level, enter the total number of years of education completed toward that level.

Examples: If the informant attended school for 8 years and did not earn a diploma or GED, enter "08". If the informant completed 17.5 years of school and earned a bachelor's degree but did not complete an attempted master's degree, enter "17". (However, if the informant attended school for 17.5 years to earn a bachelor's degree and that was the intended level of achievement, then enter "16".) If the informant attended school for 25 years to earn a PhD, enter "20" to indicate the achieved educational level.

If the subject or informant is unable or unwilling to answer the question, enter "99".

15. What is the subject's living situation?

☐ 1 Lives alone
☐ 2 Lives with spouse or partner
☐ 3 Lives with relative or friend
☐ 4 Lives with group
☐ 5 Other (*specify*): _____
☐ 9 Unknown

Check the box for whichever category most accurately describes the subject's current living situation.

Check number 5 if the subject's living situation is other than those listed, and briefly describe in the space provided (e.g., assisted living, nursing home, or boarding house).

Check number 9 only if the subject or informant is unable or unwilling to identify the subject's living situation.

16. What is the subject's level of independence?

☐ 1 Able to live independently
☐ 2 Requires some assistance with complex activities
☐ 3 Requires some assistance with basic activities
☐ 4 Completely dependent
☐ 9 Unknown

Check the box for whichever category most accurately describes the level of activity the subject is "able" to do. If the subject or informant indicates that the subject is able to perform complex activities but is not doing the activities because of his/her living situation, the subject is still considered to be "able" to live independently.

Check number 2 if subject has deterioration in accustomed complex abilities (e.g., paying bills, shopping, remembering appointments, driving, cooking).

Check number 3 if subject has deterioration in accustomed basic abilities (e.g., eating, dressing, personal hygiene).

Check number 9 only if the subject or informant is unable or unwilling to identify the subject's living situation.

17. What is the subject's type of residence?

☐ 1 Single family residence
☐ 2 Retirement community
☐ 3 Assisted living/ boarding home/adult family home
☐ 4 Skilled nursing facility/ nursing home
☐ 5 Other (*specify*): _____
☐ 9 Unknown

Check number 1 if the subject lives in an apartment, condominium, or house.

If the subject's current type of residence is other than those listed, check number 5 and briefly describe in the space provided.

Check number 9 only if the subject or informant is unable or unwilling to identify the subject's current type of residence.

18. Subject's primary residence zip code (first 3 digits): __ __ __ (*leave blank if unknown*)

Enter numerically the first three digits of the subject's primary residence (e.g., 981). If the subject or informant is unable or unwilling to provide the information, leave this space blank.

19. Subject's current marital status:

☐ 1 Married
☐ 2 Widowed
☐ 3 Divorced
☐ 4 Separated
☐ 5 Never married
☐ 6 Living as married
☐ 8 Other (*specify*): _____
☐ 9 Unknown

Check the box for whichever category most accurately describes the subject's current marital status. "Living as married" (number 6) may be applied to either heterosexual or same-sex relationships.

Check number 8 if the subject's current marital status is other than those listed, and briefly describe in the space provided.

Check number 9 only if the subject or informant is unable or unwilling to identify the subject's marital status.

20. Is the subject left- or right-handed (for example, which hand would s/he normally use to write or throw a ball)?

☐ 1 Left-handed
☐ 2 Right-handed
☐ 3 Ambidextrous
☐ 9 Unknown

Check the box for whichever category reflects the hand(s) used most predominantly by the subject, as indicated by the subject or informant.

Check number 9 only if the subject or informant is unable or unwilling to identify the subject's handedness.

Form A2: INFORMANT DEMOGRAPHICS

The purpose of this form is to gather descriptive information concerning the subject's informant. The form should be completed by the ADC intake interviewer or clinician, and information should be obtained through informant interview.

1. Informant's month/year of birth:	__ __/__ __ __ __ (*99/9999 = Unknown*)	
Enter the informant's month and year of birth in the specified numerical format (e.g., March 1920 would be entered as "03/1920"). If the informant is unable or unwilling to answer, enter "99/9999".		
2. Informant's sex:	☐ 1 Male	☐ 2 Female
Self-explanatory.		
3a. Does the informant report being of Hispanic/Latino <u>ethnicity</u> (i.e., having origins from a mainly Spanish-speaking Latin American country), regardless of race?	☐ 1 Yes	☐ 0 No ☐ 9 Unknown
Ask the informant whether s/he considers her/his ethnicity to be Hispanic/Latino.		
3b. If yes, what are the informant's reported origins?	☐ 1 Mexican/Chicano/ Mexican-American/ ☐ 2 Puerto Rican ☐ 3 Cuban ☐ 4 Dominican	☐ 5 Central American ☐ 6 South American ☐ 50 Other (*specify*): _____ ☐ 99 Unknown

Ask the informant what s/he considers the his/her origins to be. Read or show the choices, if required, and allow only one category choice.

Check number 1 if the informant reports having origins in Mexico.

Check number 2 if the informant reports having origins in Puerto Rico.

Check number 3 if the informant reports having origins in Cuba.

Check number 4 if the informant reports having origins in the Dominican Republic.

Check number 5 if the informant reports having origins in Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, or Panama.

Check number 6 if the informant reports having origins in Argentina, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, or Venezuela.

Check number 50 if the informant reports origins other than those listed, and enter the origin in the space provided.

Check number 99 only if the informant is unable or unwilling to identify his/her origins.

4. What does informant report as his/her race?

☐ 1 White
☐ 2 Black or African American
☐ 3 American Indian or Alaska Native
☐ 4 Native Hawaiian or Other Pacific Islander
☐ 5 Asian
☐ 50 Other (*specify*): _____
☐ 99 Unknown

Ask the informant what s/he considers his/her race to be. Read or show the choices, and allow only one category choice. There will be an opportunity to record other applicable race categories in items 5 and 6.

Number 4: This includes Native Hawaiian, Guamanian or Chamorro, Samoan, or Other Pacific Islander.

Number 5: This includes Asian Indian, Chinese, Filippino, Japanese, Korean, Vietnamese, or other Asian.

Check number 50 if the informant reports a race other than those listed, and enter the race in the space provided. If the informant prefers to report his/her race as multiracial, check number 50 and specify "multiracial".

Check number 99 only if the informant is unable or unwilling to identify his/her race.

5. What additional race does informant report?

☐ 1 White
☐ 2 Black or African American
☐ 3 American Indian or Alaska Native
☐ 4 Native Hawaiian or Other Pacific Islander
☐ 5 Asian
☐ 50 Other (*specify*): _____
☐ 88 None reported
☐ 99 Unknown

If the informant reports an additional race, check the box that corresponds to this additional race.

Numbers 4 and 5: See previous inclusion list (question 4).

Check number 50 if the informant reports an additional race other than those listed, and enter the race in the space provided.

Check number 88 if the informant reports no additional race.

Check number 99 only if the informant reports an additional race but is unable or unwilling to identify it.

6. What additional race, beyond what was indicated above in questions 4 and 5, does informant report?

☐ 1 White
☐ 2 Black or African American
☐ 3 American Indian or Alaska Native
☐ 4 Native Hawaiian or Other Pacific Islander
☐ 5 Asian
☐ 50 Other (*specify*): _____
☐ 88 None reported
☐ 99 Unknown

If the informant reports another race, in addition to those already indicated in questions 4 and 5, check the box that corresponds to this additional race.

Numbers 4 and 5: See previous inclusion list (question 4).

Check number 50 if the informant reports an additional race other than those listed, and enter the race in the space provided.

Check number 88 if the informant reports no additional race.

Check number 99 only if the informant reports an additional race but is unable or unwilling to identify it.

7. Informant's years of education (report achieved level using the codes below; if an attempted level is not completed, enter the number of years completed). High school/GED = 12; Bachelors degree = 16; Master's degree = 18; Doctorate = 20 years: ___ ___ (*99 = Unknown*)

This question refers to achieved educational levels, rather than the number of years it took to complete that level. Use the following to describe achieved educational levels: High school or GED = 12 years, Bachelors degree = 16 years, Master's degree = 18 years, Doctorate = 20 years.

If the informant hasn't completed a level, enter the total number of years of education completed toward that level.

Examples: If the informant attended school for 8 years and did not earn a diploma or GED, enter "08". If the informant completed 17.5 years of school and earned a bachelor's degree but did not complete an attempted master's degree, enter "17". (However, if the informant attended school for 17.5 years to earn a bachelor's degree and that was the intended level of achievement, then enter "16".) If the informant attended school for 25 years to earn a PhD, enter "20" to indicate the achieved educational level.

If the informant is unable or unwilling to answer the question, enter "99".

8. What is informant's relationship to subject?

☐ 1 Spouse/partner
☐ 2 Child
☐ 3 Sibling
☐ 4 Other relative
☐ 5 Friend/neighbor
☐ 6 Paid caregiver/provider
☐ 7 Other (*specify*): _____

Self-explanatory. If the informant's relationship to the subject is other than those listed, check number 7 and briefly describe in the space provided.

9. Does the informant live with the subject?	☐ 1 Yes (*if yes, skip to #10*)	☐ 0 No

Self-explanatory.

9a. If no, approximate frequency of in-person visits:	☐ 1 Daily	☐ 4 At least 3x/month
	☐ 2 At least 3x/week	☐ 5 Monthly
	☐ 3 Weekly	☐ 6 Less than once a month

Self-explanatory.

9b. Approximate frequency of telephone contact:	☐ 1 Daily	☐ 4 At least 3x/month
	☐ 2 At least 3x/week	☐ 5 Monthly
	☐ 3 Weekly	☐ 6 Less than once a month

Self-explanatory.

10. Is there a question about the informant's reliability?	☐ 1 Yes	☐ 0 No

The informant's reliability should be based on a consensus opinion from the staff that interacted with the informant. If there is any reason to doubt the reliability of the informant, check "yes".

Form A3: SUBJECT FAMILY HISTORY

The purpose of this form is to gather descriptive information concerning the subject's family history. The form should be completed by the ADC intake interviewer, and information should be obtained through subject/informant interview.

For the following questions:

Dementia refers to progressive loss of memory and cognition, and is often described as senility, dementia, Alzheimer's Disease, hardening of the arteries, or other causes that compromised the subject's social or occupational functioning and from which they did not recover.

Age at onset refers to the age at which dementia symptoms began, not the age at which the diagnosis was made.

Age should be identified through the clinical history, preferably given by a knowledgeable caregiver or family member. Age of mild memory difficulties of ambiguous significance, consistent with mild cognitive impairment, may not signal age at onset. Memory decline accompanied by symptoms that reflect significant functional change in the individual's abilities, e.g., in judgment, personal finances, home activities, orientation, such that the observed change(s) arouse caregiver concern over safety, determine age at onset of dementia symptoms.

Questions that probe for functional change may include the following:

When did the individual manifest constant forgetfulness, resulting in an inability to manage his/her daily schedule?

When did the individual display a significant failure in judgment in responding to solicitations or subscriptions?

When did the individual manifest a significant change in cooking abilities or other home activities?

When did the individual display a significant change in temporal or physical orientation (confusion regarding dates or locations)?

If you do not know or cannot elicit an exact age at onset, but have a general idea, please approximate to the nearest five-year period.

Please consider blood relatives only.

PARENTS:

1. Did the subject's mother have dementia (as defined above), as indicated by symptoms, history or diagnosis? ☐ 1 Yes ☐ 0 No ☐ 9 Unknown

Check "yes" if the subject's mother had dementia based on the description defined above. If the subject or informant provides no specific evidence (i.e., symptoms, history, or diagnosis) that the subject's mother had dementia, then check "no".

If, after probing the subject or informant, evidence of the mother's dementia status is ambiguous, then check "unknown".

a. If the subject's mother had dementia, indicate the age at which she developed dementia symptoms (age at onset, as defined above). (*999 = Age unknown; 888 = N/A)* __ __ __ (years)

Enter the mother's age in years when she first displayed symptoms of dementia; do not enter her age at the time dementia was diagnosed. If the subject/informant is unable or unwilling to answer, enter "999".

b. If the subject's mother has dementia and is living, indicate her current age. (*999 = Age unknown; 888 = N/A)* __ __ __ (years)

Enter the mother's age in years if she is alive and has dementia. If the subject/informant is unable or unwilling to answer, enter "999".

c. If the subject's mother had dementia and is deceased, indicate her age at death. (*999 = Age unknown; 888 = N/A)* __ __ __ (years)

Enter the mother's age in years if she had dementia and has died. If the subject/informant is unable or unwilling to answer, enter "999".

2. Did the subject's father have dementia (as defined above), as indicated by symptoms, history or diagnosis? ☐ 1 Yes ☐ 0 No ☐ 9 Unknown

Check "yes" if the subject's father had dementia based on the description defined above. If the subject or informant provides no specific evidence (i.e., symptoms, history, or diagnosis) that the subject's father had dementia, then check "no".

If, after probing the subject or informant, evidence of the father's dementia status is ambiguous, then check "unknown".

a. If the subject's father had dementia, indicate the age at which he developed dementia symptoms (age at onset, as defined above). (*999 = Age unknown; 888 = N/A)* __ __ __ (years)

Enter the father's age in years when he first displayed symptoms of dementia; do not enter his age at the time dementia was diagnosed. If the subject/informant is unable or unwilling to answer, enter "999".

b. If the subject's father has dementia and is living, indicate his current age. (*999 = Age unknown; 888 = N/A)* __ __ __ (years)

Enter the father's numerical age in years if he is alive and has dementia. If the subject/informant is unable or unwilling to answer, enter "999".

c. If the subject's father had dementia and is deceased, indicate his age at death. (*999 = Age unknown; 888 = N/A)* __ __ __ (years)

Enter the father's age in years if he had dementia and has died. If the subject/informant is unable or unwilling to answer, enter "999".

SIBLINGS:

3. Is the subject a twin? ☐ 1 Yes ☐ 0 No ☐ 9 Unknown

Self-explanatory.

3a. If yes, indicate type: ☐ 1 Monozygotic (i.e., identical) ☐ 2 Dizygotic (i.e., fraternal) ☐ 8 N/A ☐ 9 Unknown

Self-explanatory.

4. How many full siblings did the subject have? (*99 = Unknown*) __ __

Enter the number of siblings born to the subject's biological parents. If the subject/informant is unable or unwilling to answer, enter "99".

5. How many of these siblings had dementia (as defined above), as indicated by symptoms, history or diagnosis? (*99 = Unknown; 88 = N/A*) __ __

If the subject or informant provides no specific evidence (i.e., symptoms, history, or diagnosis) that the subject's siblings had dementia, then enter "0".

If, after probing the subject or informant, evidence of the sibling's dementia status is ambiguous, enter "99".

If the subject had no siblings, as indicated by the answer to question 4, enter "88".

For each sibling with dementia, indicate age at onset (as defined above) if living or deceased, and current age if living:

	1) Age at onset	2) Current age if living	
a. Sibling 1	__ __ __ (years)	__ __ __ (years)	(*999 = Age unknown; 888 = N/A*)
b. Sibling 2	__ __ __ (years)	__ __ __ (years)	
c. Sibling 3	__ __ __ (years)	__ __ __ (years)	
d. Sibling 4	__ __ __ (years)	__ __ __ (years)	
e. Sibling 5	__ __ __ (years)	__ __ __ (years)	
f. Sibling 6	__ __ __ (years)	__ __ __ (years)	

1) For each full sibling identified as having dementia, regardless of whether deceased or still living, enter the numerical age in years when s/he first displayed symptoms of dementia; do not enter the age at which dementia was diagnosed. If the subject/informant is unable or unwilling to provide the age of a certain sibling, enter "999" as that sibling's age.

2) Enter the numerical age in years for each full sibling still alive and identified as having dementia. If the subject/informant is unable or unwilling to provide the age of a certain sibling, enter "999" as that sibling's age.

CHILDREN:

6. How many biological children did the subject have? (*99 = Unknown*) __ __

Enter the number of children born to the subject. If the subject/informant is unable or unwilling to answer, enter "99".

7. How many of these children had dementia (as defined above) as indicated by symptoms, history or diagnosis? (*99 = Unknown; 88 = N/A*) __ __

If the subject or informant provides no specific evidence (i.e., symptoms, history, or diagnosis) that the subject's children had dementia, then enter "0".

If, after probing the subject or informant, evidence of the children's dementia status is ambiguous, enter "99".

If the subject had no children, as indicated by the answer to question 6, enter "88".

For each child with dementia, indicate age at onset (as defined above) if living or deceased, and current age if living:

	1) Age at onset	2) Current age if living	
a. Child 1	__ __ __ (years)	__ __ __ (years)	(*999 = Age unknown; 888 = N/A*)
b. Child 2	__ __ __ (years)	__ __ __ (years)	
c. Child 3	__ __ __ (years)	__ __ __ (years)	
d. Child 4	__ __ __ (years)	__ __ __ (years)	
e. Child 5	__ __ __ (years)	__ __ __ (years)	
f. Child 6	__ __ __ (years)	__ __ __ (years)	

1) For each child identified as having dementia, regardless of whether deceased or still living, enter the numerical age in years when s/he first displayed symptoms of dementia; do not enter the age at which dementia was diagnosed. If the subject/informant is unable or unwilling to provide the age of a certain child, enter "999" as that child's age.

2) Enter the numerical age in years for each child still alive and identified as having dementia. If the subject/informant is unable or unwilling to provide the age of a certain child, enter "999" as that child's age.

OTHER RELATIVES:

8. Number of other blood relatives with dementia (as defined above) (cousins, aunts, uncles, grandparents, half siblings), as indicated by symptoms, history or diagnosis. (*99 = Unknown*) __ __

If the subject or informant provides no specific evidence (i.e., symptoms, history, or diagnosis) that the subject's other relatives had dementia, then enter "0".

If, after probing the subject or informant, evidence of the dementia status for other relatives is ambiguous, then enter "99".

For each other blood relative with dementia, indicate age at onset (as defined above) if living or deceased, and current age if living:

	1) Age at onset	2) Current age if living	
a. Relative 1	__ __ __ (years)	__ __ __ (years)	(*999 = Age unknown; 888 = N/A*)
b. Relative 2	__ __ __ (years)	__ __ __ (years)	
c. Relative 3	__ __ __ (years)	__ __ __ (years)	
d. Relative 4	__ __ __ (years)	__ __ __ (years)	
e. Relative 5	__ __ __ (years)	__ __ __ (years)	
f. Relative 6	__ __ __ (years)	__ __ __ (years)	

1) For other blood relative identified as having dementia, regardless of whether deceased or still living, enter the numerical age in years when s/he first displayed symptoms of dementia; do not enter the age at which dementia was diagnosed. If the subject/informant is unable or unwilling to provide the age of a certain relative, enter "999" as that relative's age.

2) Enter the numerical age in years for each other blood relative still alive and identified as having dementia. If the subject/informant is unable or unwilling to provide the age of a certain relative, enter "999" as that relative's age.

Form A4: SUBJECT MEDICATIONS

The purpose of this form is to record all medications (prescription, non-prescription, and vitamins/supplements) taken by the subject within the two weeks prior to the current visit. The form should be completed by the clinician or ADC staff, based on subject/informant report, medical records, and/or observation. It is helpful to ask the subject to bring the medications to the research assessment, so more complete information can be obtained. If the subject does not bring the medications or a detailed list to the assessment, telephone follow-up may be necessary. Record the name and dosage of the medication as the subject is actually taking it.

1. Is the subject currently taking any prescription medications? ☐ Yes ☐ No

	Medication strength: Enter numeric value for strength, then indicate the appropriate unit of measure (µg, mg, mL, IU)					**Frequency:** Enter numeric value for total number of doses taken per Day, Week, or Month				**Prescribed as PRN?** (if yes, also indicate PRN frequency)		**PRN Frequency (average for the past 2 weeks):** Enter numeric value for total number of doses taken per Day, Week, or Month			
Prescription medication name (please PRINT clearly)	(1) **Strength**	(2) **µg**	**mg**	**mL**	**IU**	(3) **# Doses**	(4) **D**	**W**	**M**	(5) **Yes**	**No**	(6) **# Doses**	(7) **D**	**W**	**M**
a.		☐ 1	☐ 2	☐ 3	☐ 4		☐ 1	☐ 2	☐ 3	☐ 1	☐ 0		☐ 1	☐ 2	☐ 3
↓ (*20 spaces total*)															
t.		☐ 1	☐ 2	☐ 3	☐ 4		☐ 1	☐ 2	☐ 3	☐ 1	☐ 0		☐ 1	☐ 2	☐ 3

Clearly print the names of up to twenty (20) prescription medications taken by the subject within the past two weeks. Specify the numeric value of the strength, the unit of measure for that strength, and the number and frequency of the prescribed doses. Specify if the medication is prescribed to be taken as needed. If "yes", indicate the average number of doses taken per day, week or month. It is possible that the subject is not taking the medication as originally prescribed or as written on the prescription bottle. If medication strength cannot be determined, enter "99999". If "# of doses" cannot be determined, enter "99".

2. Is the subject currently taking any non-prescription medications (OTC)? ☐ Yes ☐ No

	Medication strength: Enter numeric value for strength, then indicate the appropriate unit of measure (µg, mg, mL, IU)					**Frequency:** Enter numeric value for total number of doses taken per Day, Week, or Month			
OTC medication name (please PRINT clearly)	(1) **Strength**	(2) **µg**	**mg**	**mL**	**IU**	(3) **# Doses**	(4) **D**	**W**	**M**
a.		☐ 1	☐ 2	☐ 3	☐ 4		☐ 1	☐ 2	☐ 3
↓ (*20 spaces total*)									
t.		☐ 1	☐ 2	☐ 3	☐ 4		☐ 1	☐ 2	☐ 3

Clearly print the names of up to twenty (20) non-prescription medications (i.e., over-the-counter drugs) taken by the subject within the past two weeks. Specify the numeric value of the strength, the unit of measure for that strength, and the number and frequency of the prescribed doses. If medication strength cannot be determined, enter "99999". If # of doses cannot be determined, enter "99".

3. Is the subject currently taking any vitamins or supplements? ☐ Yes ☐ No

	Medication strength: Enter numeric value for strength, then indicate the appropriate unit of measure (µg, mg, mL, IU)					**Frequency:** Enter numeric value for total number of doses taken per Day, Week, or Month			
Vitamin/supplement name (please PRINT clearly)	(1) **Strength**	(2) **µg**	**mg**	**mL**	**IU**	(3) **# Doses**	(4) **D**	**W**	**M**
a.		☐ 1	☐ 2	☐ 3	☐ 4		☐ 1	☐ 2	☐ 3
↓ (*20 spaces total*)									
t.		☐ 1	☐ 2	☐ 3	☐ 4		☐ 1	☐ 2	☐ 3

Clearly print the names of up to twenty (20) vitamins and/or supplements taken by the subject within the past two weeks. Specify the numeric value of the strength, the unit of measure for that strength, and the number and frequency of the prescribed doses. Record the trade names of multivitamins instead of trying to enter each individual component and related strength. If medication strength cannot be determined, enter "99999". If # of doses cannot be determined, enter "99".

Form A5: SUBJECT HEALTH HISTORY

The purpose of this form is to record a history of conditions at the current visit as determined by the clinician's best judgment. The form should be completed by the clinician, based on subject/informant report, medical records, and/or observation.

- A condition should be considered "Absent" if it is not indicated by information obtained from informant report, medical records and/or observation.
- A condition should be considered "Recent/Active" if it happened within the last year or still requires active management, and is consistent with information obtained from informant report, medical records and/or observation.
- A condition should be considered "Remote/Inactive" if it existed or occurred in the past (greater than one year ago) but was resolved or there is no current treatment underway.
- A condition should be considered "Unknown" if there is insufficient information available from informant report, medical records and/or observation.

1. Cardiovascular disease	Absent	Recent/Active	Remote/Inactive	Unknown
a. Heart attack/cardiac arrest	☐ 0	☐ 1	☐ 2	☐ 9
b. Atrial fibrillation	☐ 0	☐ 1	☐ 2	☐ 9
c. Angioplasty/endarterectomy/stent	☐ 0	☐ 1	☐ 2	☐ 9
d. Cardiac bypass procedure	☐ 0	☐ 1	☐ 2	☐ 9
e. Pacemaker	☐ 0	☐ 1	☐ 2	☐ 9
f. Congestive heart failure	☐ 0	☐ 1	☐ 2	☐ 9
g. Other (*specify*): _____	☐ 0	☐ 1	☐ 2	☐ 9

Items 1a–1f are self-explanatory.

For item 1g, ask if the subject has any cardiovascular disease other than those listed. If no, check "0". If yes, record the condition in the space provided and check the appropriate box to specify whether recent/active or remote/inactive.

2. Cerebrovascular disease	Absent	Recent/Active	Remote/Inactive	Unknown
a. Stroke	☐ 0	☐ 1	☐ 2	☐ 9

If recent/active or remote/inactive, indicate year(s) in which this occurred:

(*9999 = Year unknown*) 1) __ __ __ __ 2) __ __ __ __ 3) __ __ __ __

4) __ __ __ __ 5) __ __ __ __ 6) __ __ __ __

(continued on next page)

b. Transient ischemic attack	☐ 0	☐ 1	☐ 2	☐ 9
If recent/active or remote/inactive, indicate year(s) in which this occurred: (*9999 = Year unknown*)	1) __ __ __ __	2) __ __ __ __	3) __ __ __ __	
	4) __ __ __ __	5) __ __ __ __	6) __ __ __ __	
c. Other (*specify*): _____	☐ 0	☐ 1	☐ 2	☐ 9

Self-explanatory. Enter each year of occurrence as a 4-digit number. If subject has a history of cerebrovascular disease other than those listed, briefly describe the condition in "Other" and check the appropriate box.

3. Parkinsonian features	**Absent**	**Recent/Active**	**Unknown**
a. Parkinson's disease	☐ 0	☐ 1	☐ 9
If recent/active, indicate year of diagnosis: (*9999 = Year unknown*) __ __ __ __			
b. Other Parkinsonism disorder	☐ 0	☐ 1	☐ 9
If recent/active, indicate year of diagnosis: (*9999 = Year unknown*) __ __ __ __			

Self-explanatory. Enter the year of diagnosis as a 4-digit number.

4. Other neurologic conditions	**Absent**	**Recent/Active**	**Remote/Inactive**	**Unknown**
a. Seizures	☐ 0	☐ 1	☐ 2	☐ 9
b. Traumatic brain injury				
1) with brief loss of consciousness (< 5 minutes)	☐ 0	☐ 1	☐ 2	☐ 9
2) with extended loss of consciousness (≥ 5 minutes)	☐ 0	☐ 1	☐ 2	☐ 9
3) with chronic deficit or dysfunction	☐ 0	☐ 1	☐ 2	☐ 9
c. Other (*specify*): _____	☐ 0	☐ 1	☐ 2	☐ 9

Self-explanatory. For item 4b3, check number 1 or 2 if sustained neurological impairment resulted from the head injury.

If subject has a history of neurologic condition other than those listed, briefly describe the condition in "Other" and check the appropriate box.

5. Medical/metabolic conditions	Absent	Recent/Active	Remote/Inactive	Unknown
a. Hypertension	☐ 0	☐ 1	☐ 2	☐ 9
b. Hypercholesterolemia	☐ 0	☐ 1	☐ 2	☐ 9
c. Diabetes	☐ 0	☐ 1	☐ 2	☐ 9
d. B12 deficiency	☐ 0	☐ 1	☐ 2	☐ 9
e. Thyroid disease	☐ 0	☐ 1	☐ 2	☐ 9
f. Incontinence – urinary	☐ 0	☐ 1	☐ 2	☐ 9
g. Incontinence – bowel	☐ 0	☐ 1	☐ 2	☐ 9

Self-explanatory.

6. Depression	No	Yes	Unknown

Include depressive disorders for which a clinician was consulted, whether or not treatment (behavioral or drug) was received. Depression includes major depressive disorder, situational depression, bipolar disorders, dysthymic disorders, and other mood disorders. Assessment can include DSM diagnoses, chart reviews, clinicians' opinion, or whether the subject is taking an SSRI for a depressive/mood disorder.

a. Active within past 2 years	☐ 0	☐ 1	☐ 9

Check "yes" if the subject has had a depression requiring medical attention within the last two years. If there have been no episodes of depression within the past two years, check "no". If, based on subject/informant report and/or medical records, it cannot be determined whether depression has occurred within the past two years, check "unknown".

b. Other episodes (prior to 2 years)	☐ 0	☐ 1	☐ 9

Check "yes" if episodes of depression occurred more than two years ago. If there were no episodes of depression prior to two years ago, check "no". If, based on subject/informant report and/or medical records, it cannot be determined whether depression occurred prior to the past two years, check "unknown".

7. Substance abuse and psychiatric disorders a. Substance abuse – alcohol	Absent	Recent/Active	Remote/Inactive	Unknown
1) Clinically significant impairment occurring over a 12-month period manifested in one of the following: work, driving, legal or social.	☐ 0	☐ 1	☐ 2	☐ 9

Self-explanatory.

b. Cigarette smoking history	No	Yes	Unknown
This section refers to cigarette smoking only. If your Center is interested in capturing information regarding chewing tobacco, snuff, etc., please use a separate non-UDS form.			
1) Has subject smoked within last 30 days?	☐ 0	☐ 1	☐ 9
Self-explanatory.			
2) Has subject smoked more than 100 cigarettes in his/her life?	☐ 0	☐ 1	☐ 9
If the subject has not smoked more than 100 cigarettes in his/her life, check "no" and then indicate "N/A" for each of the remaining three questions below.			

3) Total years smoked: (*88 = N/A; 99 = Unknown*) __ __

Self-explanatory.

4) Average number of packs/day smoked:

☐ 1	1 cigarette – < ½ pack	☐ 4	1½ – < 2 packs	☐ 9	Unknown
☐ 2	½ – < 1 pack	☐ 5	≥ 2 packs		
☐ 3	1 – < 1½ pack	☐ 8	N/A		

Check the appropriate box to indicate the average number of packs per day smoked by the subject while s/he was a smoker. Check number 9 only if the smoking history is unknown, based on available information or observation.

5) If subject quit smoking, specify age when last smoked (i.e., quit):
(*888 = N/A; 999 = Unknown*) __ __ __

Self-explanatory.

c. Other abused substances	Absent	Recent/Active	Remote/Inactive	Unknown
1) Clinically significant impairment occurring over a 12-month period manifested in one of the following: work, driving, legal or social.	☐ 0	☐ 1	☐ 2	☐ 9

If recent/active or remote/inactive, specify abused substance(s): _____

If number 1 or 2 is checked, briefly describe the other abused substance(s) in the space provided.

d. Psychiatric disorders ☐ 0 ☐ 1 ☐ 2 ☐ 9

If recent/active or remote/inactive, specify disorder(s): _____

If number 1 or 2 is checked, briefly describe the psychiatric disorder(s), other than depression (reported in item 6 above), in the space provided.

Form B1: EVALUATION FORM – PHYSICAL

The purpose of this form is to provide a record of physical evaluation of the subject for the current visit. The form should be completed by the clinician, based on information obtained through examination.

SUBJECT PHYSICAL MEASUREMENTS		
1.	Subject height (inches):	(*99.9 = unknown*) __ __ . __
	If height cannot be measured (e.g., subject is confined to a wheelchair or unable to stand), enter "99.9".	
2.	Subject weight (lbs.):	(*999 = unknown*) __ __ __
	If weight cannot be measured, enter "999".	
3.	Subject blood pressure (sitting)	(*999/999 = unknown*) __ __ __ /__ __ __
	If blood pressure cannot be obtained, enter "999" for both systolic and diastolic values.	
4.	Subject resting heart rate (pulse)	(*999 = unknown*) __ __ __
	If pulse cannot be obtained, enter "999".	

ADDITIONAL PHYSICAL OBSERVATIONS		Yes	No	Unknown
5.	Without corrective lenses, is the subject's vision functionally normal?	☐ 1	☐ 0	☐ 9
	Check "no" if any functional impairment exists (reduced ability to do everyday activities such as reading, watching television).			
6.	Does the subject usually wear corrective lenses?	☐ 1	☐ 0	☐ 9
6a.	If yes, is the subject's vision functionally normal with corrective lenses?	☐ 1	☐ 0	☐ 9
	Check "no" if any functional impairment exists (reduced ability to do everyday activities such as reading, watching television).			
7.	Without a hearing aid(s), is the subject's hearing functionally normal?	☐ 1	☐ 0	☐ 9
	Check "no" if any functional impairment exists (reduced ability to do everyday activities such as listening to the radio or television, talking with family or friends).			
8.	Does the subject usually wear a hearing aid(s)?	☐ 1	☐ 0	☐ 9
8a.	If yes, is the subject's hearing functionally normal with a hearing aid(s)?	☐ 1	☐ 0	☐ 9
	Check "no" if any functional impairment exists (reduced ability to do everyday activities such as listening to the radio or television, talking with family or friends).			

Form B2: EVALUATION FORM – HACHINSKI ISCHEMIC SCALE

The form should be completed by the clinician, based on information obtained from history/physical/ neurological exam and/or medical records.

HACHINSKI ISCHEMIC SCORE[1]

Please complete the following scale using information obtained from history/physical/neurological exam and/or medical records. Indicate if a characteristic is present or characteristic of the patient by circling the appropriate value.

	Present	Absent
1. Abrupt onset (re: cognitive status)	2	0
2. Stepwise deterioration (re: cognitive status)	1	0
3. Somatic complaints	1	0
4. Emotional incontinence	1	0
5. History or presence of hypertension	1	0
6. History of stroke	2	0
7. Focal neurological symptoms	2	0
8. Focal neurological signs	2	0

Circle the appropriate value to indicate if a specific item is present (characteristic of the patient) or absent.

Items 7 and 8 refer to symptoms and signs with cerebrovascular origins; for example, aphasia due to stroke would be included here. Aphasia such as Primary Progressive Aphasia would not be reflected in the Hachinski Ischemic Score.

9. **Sum all circled answers for a Total Score:** __ __

Calculate the sum of values for all circled answers and enter the total score in the space provided.

[1] Rosen Modification of Hachinski Ischemic Score (*Ann Neurol* 7:486-488, 1980).

Form B3: EVALUATION FORM – UNIFIED PARKINSON'S DISEASE RATING SCALE (UPDRS[1]) – MOTOR EXAM

The form should be completed by the clinician, based on neurological exam of the subject. Choose the most accurate description of the subject's current condition for each neurological aspect.

☐ If the clinician completes the UPDRS examination and determines all items are normal, check this box and end form here.

This box may be checked in lieu of all other items below if the clinician completes the subject exam and determines that all functions are normal.

UPDRS MOTOR EXAMINATION

1. Speech
   - ☐ 0 Normal.
   - ☐ 1 Slight loss of expression, diction and/or volume.
   - ☐ 2 Monotone, slurred but understandable; moderately impaired.
   - ☐ 3 Marked impairment, difficult to understand.
   - ☐ 4 Unintelligible.

2. Facial expression
   - ☐ 0 Normal.
   - ☐ 1 Minimal hypomimia, could be normal "poker face".
   - ☐ 2 Slight but definitely abnormal diminution of facial expression.
   - ☐ 3 Moderate hypomimia; lips parted some of the time.
   - ☐ 4 Masked or fixed facies with severe or complete loss of facial expression; lips parted ¼ inch or more.

3a. Tremor at rest – Face, lips, chin
   - ☐ 0 Absent.
   - ☐ 1 Slight and infrequently present.
   - ☐ 2 Mild in amplitude and persistent; or moderate in amplitude, but only intermittently present.
   - ☐ 3 Moderate in amplitude and present most of the time.
   - ☐ 4 Marked in amplitude and present most of the time.

3b. Tremor at rest – Right hand
   - ☐ 0 Absent.
   - ☐ 1 Slight and infrequently present.
   - ☐ 2 Mild in amplitude and persistent; or moderate in amplitude, but only intermittently present.
   - ☐ 3 Moderate in amplitude and present most of the time.
   - ☐ 4 Marked in amplitude and present most of the time.

[1] Fahn S, Elton RL, UPDRS Development Committee. The Unified Parkinson's Disease Rating Scale. In Fahn S, Marsden CD, Calne DB, Goldstein M, eds. Recent developments in Parkinson's disease. Vol. 2. Florham Park, NJ: Macmillan Healthcare Information, 1987:153-163, 293-304. Reproduced by permission of the author.

3c. Tremor at rest – Left hand

☐ 0 Absent.

☐ 1 Slight and infrequently present.

☐ 2 Mild in amplitude and persistent; or moderate in amplitude, but only intermittently present.

☐ 3 Moderate in amplitude and present most of the time.

☐ 4 Marked in amplitude and present most of the time.

3d. Tremor at rest – Right foot

☐ 0 Absent.

☐ 1 Slight and infrequently present.

☐ 2 Mild in amplitude and persistent; or moderate in amplitude, but only intermittently present.

☐ 3 Moderate in amplitude and present most of the time.

☐ 4 Marked in amplitude and present most of the time.

3e. Tremor at rest – Left foot

☐ 0 Absent.

☐ 1 Slight and infrequently present.

☐ 2 Mild in amplitude and persistent; or moderate in amplitude, but only intermittently present.

☐ 3 Moderate in amplitude and present most of the time.

☐ 4 Marked in amplitude and present most of the time.

4a. Action or postural tremor of hands –Right hand

☐ 0 Absent.

☐ 1 Slight; present with action.

☐ 2 Moderate in amplitude, present with action.

☐ 3 Moderate in amplitude with posture holding as well as action.

☐ 4 Marked in amplitude; interferes with feeding.

4b. Action or postural tremor of hands – Left hand

☐ 0 Absent.

☐ 1 Slight; present with action.

☐ 2 Moderate in amplitude, present with action.

☐ 3 Moderate in amplitude with posture holding as well as action.

☐ 4 Marked in amplitude; interferes with feeding.

5a. Rigidity – Neck (judged on passive movement of major joints with patient relaxed in sitting position; cogwheeling to be ignored)

☐ 0 Absent.

☐ 1 Slight or detectable only when activated by mirror or other movements.

☐ 2 Mild to moderate.

☐ 3 Marked, but full range of motion easily achieved.

☐ 4 Severe; range of motion achieved with difficulty.

5b. Rigidity – Right upper extremity (judged on passive movement of major joints with patient relaxed in sitting position; cogwheeling to be ignored)

☐ 0 Absent.

☐ 1 Slight or detectable only when activated by mirror or other movements.

☐ 2 Mild to moderate.

☐ 3 Marked, but full range of motion easily achieved.

☐ 4 Severe; range of motion achieved with difficulty.

5c. Rigidity – Left upper extremity (judged on passive movement of major joints with patient relaxed in sitting position; cogwheeling to be ignored)

☐ 0 Absent.

☐ 1 Slight or detectable only when activated by mirror or other movements.

☐ 2 Mild to moderate.

☐ 3 Marked, but full range of motion easily achieved.

☐ 4 Severe; range of motion achieved with difficulty.

5d. Rigidity – Right lower extremity (judged on passive movement of major joints with patient relaxed in sitting position; cogwheeling to be ignored)

☐ 0 Absent.

☐ 1 Slight or detectable only when activated by mirror or other movements.

☐ 2 Mild to moderate.

☐ 3 Marked, but full range of motion easily achieved.

☐ 4 Severe; range of motion achieved with difficulty.

5e. Rigidity – Left lower extremity (judged on passive movement of major joints with patient relaxed in sitting position; cogwheeling to be ignored)

☐ 0 Absent.

☐ 1 Slight or detectable only when activated by mirror or other movements.

☐ 2 Mild to moderate.

☐ 3 Marked, but full range of motion easily achieved.

☐ 4 Severe; range of motion achieved with difficulty.

6a. Finger taps – Right hand (patient taps thumb with index finger in rapid succession)

☐ 0 Normal.

☐ 1 Mild slowing and/or reduction in amplitude.

☐ 2 Moderately impaired; definite and early fatiguing; may have occasional arrests in movement.

☐ 3 Severely impaired; frequent hesitation in initiating movements or arrests in ongoing movement.

☐ 4 Can barely perform the task.

☐ 8 Untestable (*specify reason*):_____

6b. Finger taps – Left hand (patient taps thumb with index finger in rapid succession)

☐ 0 Normal.

☐ 1 Mild slowing and/or reduction in amplitude.

☐ 2 Moderately impaired; definite and early fatiguing; may have occasional arrests in movement.

☐ 3 Severely impaired; frequent hesitation in initiating movements or arrests in ongoing movement.

☐ 4 Can barely perform the task.

☐ 8 Untestable (*specify reason*):_____

7a. Hand movements – Right hand (patient opens and closes hands in rapid succession)

☐ 0 Normal.

☐ 1 Mild slowing and/or reduction in amplitude.

☐ 2 Moderately impaired; definite and early fatiguing; may have occasional arrests in movement.

☐ 3 Severely impaired; frequent hesitation in initiating movements or arrests in ongoing movement.

☐ 4 Can barely perform the task.

☐ 8 Untestable (*specify reason*):_____

7b. Hand movements – Left hand (patient opens and closes hands in rapid succession)

☐ 0 Normal.

☐ 1 Mild slowing and/or reduction in amplitude.

☐ 2 Moderately impaired; definite and early fatiguing; may have occasional arrests in movement.

☐ 3 Severely impaired; frequent hesitation in initiating movements or arrests in ongoing movement.

☐ 4 Can barely perform the task.

☐ 8 Untestable (*specify reason*):_____

8a. Rapid alternating movements of hands – Right hand (pronation-supination movements of hands, vertically and horizontally, with as large an amplitude as possible, both hands simultaneously)

☐ 0 Normal.

☐ 1 Mild slowing and/or reduction in amplitude.

☐ 2 Moderately impaired; definite and early fatiguing; may have occasional arrests in movement.

☐ 3 Severely impaired; frequent hesitation in initiating movements or arrests in ongoing movement.

☐ 4 Can barely perform the task.

☐ 8 Untestable (*specify reason*):_____

8b. Rapid alternating movements of hands – Left hand (pronation-supination movements of hands, vertically and horizontally, with as large an amplitude as possible, both hands simultaneously)

☐ 0 Normal.

☐ 1 Mild slowing and/or reduction in amplitude.

☐ 2 Moderately impaired; definite and early fatiguing; may have occasional arrests in movement.

☐ 3 Severely impaired; frequent hesitation in initiating movements or arrests in ongoing movement.

☐ 4 Can barely perform the task.

☐ 8 Untestable (*specify reason*):_____

9a. Leg agility – Right leg (patient taps heel on the ground in rapid succession, picking up entire leg; amplitude should be at least 3 inches)

☐ 0 Normal.

☐ 1 Mild slowing and/or reduction in amplitude.

☐ 2 Moderately impaired; definite and early fatiguing; may have occasional arrests in movement.

☐ 3 Severely impaired; frequent hesitation in initiating movements or arrests in ongoing movement.

☐ 4 Can barely perform the task.

☐ 8 Untestable (*specify reason*): _____

9b. Leg agility – Left leg (patient taps heel on the ground in rapid succession, picking up entire leg; amplitude should be at least 3 inches)

☐ 0 Normal.

☐ 1 Mild slowing and/or reduction in amplitude.

☐ 2 Moderately impaired; definite and early fatiguing; may have occasional arrests in movement.

☐ 3 Severely impaired; frequent hesitation in initiating movements or arrests in ongoing movement.

☐ 4 Can barely perform the task.

☐ 8 Untestable (*specify reason*): _____

10. Arising from chair (patient attempts to rise from a straight-backed chair, with arms folded across chest)

☐ 0 Normal.

☐ 1 Slow; or may need more than one attempt.

☐ 2 Pushes self up from arms of seat.

☐ 3 Tends to fall back and may have to try more than one time, but can get up without help.

☐ 4 Unable to arise without help.

☐ 8 Untestable (*specify reason*): _____

11. Posture

☐ 0 Normal.

☐ 1 Not quite erect, slightly stooped posture; could be normal for older person.

☐ 2 Moderately stooped posture, definitely abnormal; can be slightly leaning to one side.

☐ 3 Severely stooped posture with kyphosis; can be moderately leaning to one side.

☐ 4 Marked flexion with extreme abnormality of posture.

☐ 8 Untestable (*specify reason*): _____

12. Gait

☐ 0 Normal.

☐ 1 Walks slowly; may shuffle with short steps, but no festination (hastening steps) or propulsion.

☐ 2 Walks with difficulty, but requires little or no assistance; may have some festination, short steps, or propulsion.

☐ 3 Severe disturbance of gait requiring assistance.

☐ 4 Cannot walk at all, even with assistance.

☐ 8 Untestable (*specify reason*): _____

13. Posture stability (response to sudden, strong posterior displacement produced by pull on shoulders while patient erect with eyes open and feet slightly apart; patient is prepared)

☐ 0 Normal erect.

☐ 1 Retropulsion, but recovers unaided.

☐ 2 Absence of postural response; would fall if not caught by examiner.

☐ 3 Very unstable, tends to lose balance spontaneously.

☐ 4 Unable to stand without assistance.

☐ 8 Untestable (*specify reason*): _____

14. Body bradykinesia and hypokinesia (combining slowness, hesitancy, decreased arm swing, small amplitude, and poverty of movement in general)

☐ 0 None.

☐ 1 Minimal slowness, giving movement a deliberate character; could be normal for some persons; possibly reduced amplitude.

☐ 2 Mild degree of slowness and poverty of movement which is definitely abnormal. Alternatively, some reduced amplitude.

☐ 3 Moderate slowness, poverty or small amplitude of movement.

☐ 4 Marked slowness, poverty or small amplitude of movement.

Form B4: GLOBAL STAGING – CLINICAL DEMENTIA RATING (CDR[1])

The form should be completed by the clinician, based on informant report and neurological exam of the subject. In the extremely rare instances when no informant is available, the clinician must complete the CDR utilizing all other available information and his/her best clinical judgment. In support of the Uniform Data Set (UDS), NACC asked the Washington University ADC to create a CDR training site for ADC personnel based on the training currently offered for staff working on the Alzheimer's Disease Cooperative Study (ADCS) trials. The UDS-CDR Training System may be accessed online at http://alzheimer.wustl.edu/cdrtraining/uds.

Assignment of CDR

Use all information 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. In that situation, the standard procedure is to check the box of greater impairment.

Aphasia is taken into account by assessing both language and non-language function in each cognitive category. If aphasia is present to a greater degree than the general dementia, the subject is rated according to the general dementia. Supply evidence of non-language cognitive function.

CDR sum of boxes

Calculate the sum of values for all answers and enter the total score in the space provided.

Global CDR

The global CDR is derived from the scores in each of the six categories ("box score") as follows:

- Memory (M) is the primary category and all others are secondary.
- CDR = M if at least three secondary categories are given the same score as memory. Whenever three or more secondary categories are given a score greater or less than the memory score, CDR = score of majority of secondary categories on whichever side of M has the greater number of secondary categories. However, when three secondary categories are scored on one side of M and two secondary categories are scored on the other side of M, then CDR = M.
- When M = 0.5, CDR = 1 if at least three of the other categories are scored 1 or greater. If M = 0.5, then CDR cannot be 0; it can only be 0.5 or 1.
- If M = 0, then CDR = 0 unless there is impairment (0.5 or greater) in two more secondary categories, in which case CDR = 0.5.

Although applicable to most AD situations, these rules do not cover all possible scoring combinations. Unusual circumstances that occasionally occur in AD, and may be expected in non-Alzheimer's dementia as well, are scored as follows:

1) With ties in the secondary categories on one side of M, choose the tied scores closest to M for CDR (e.g., if M and another secondary category = 3, two secondary categories = 2, and two secondary categories = 1, then CDR = 2).
2) When only one or two secondary categories are given the same score as M, CDR = M as long as no more than two secondary categories are on either side of M.
3) When M = 1 or greater, CDR cannot be 0; in this circumstance, CDR = 0.5 when the majority of secondary categories are 0.

The CDR scoring algorithm can be accessed online at http://www.biostat.wustl.edu/~adrc/cdrpgm/index.html.

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[1] Morris JC. The Clinical Dementia Rating (CDR): Current version and scoring rules. *Neurology* 43(11):2412-4, 1993.

CLINICAL DEMENTIA RATING (CDR[1])

	IMPAIRMENT				
Please enter scores below	**None 0**	**Questionable 0.5**	**Mild 1**	**Moderate 2**	**Severe 3**
1. MEMORY __ . __	No memory loss, or slight inconsistent forgetfulness.	Consistent slight forgetfulness; partial recollection of events; "benign" forgetfulness.	Moderate memory loss, more marked for recent events; defect interferes with everyday activities.	Severe memory loss; only highly learned material retained; new material rapidly lost.	Severe memory loss; only fragments remain.
2. ORIENTATION __ . __	Fully oriented.	Fully oriented except for slight difficulty with time relationships.	Moderate difficulty with time relationships; oriented for place at examination; may have geographic disorientation elsewhere.	Severe difficulty with time relationships; usually disoriented to time, often to place.	Oriented to person only.
3. JUDGMENT & PROBLEM SOLVING __ . __	Solves everyday problems, handles business & financial affairs well; judgment good in relation to past performance.	Slight impairment in solving problems, similarities, and differences.	Moderate difficulty in handling problems, similarities, and differences; social judgment usually maintained.	Severely impaired in handling problems, similarities, and differences; social judgment usually impaired.	Unable to make judgments or solve problems.
4. COMMUNITY AFFAIRS __ . __	Independent function at usual level in job, shopping, volunteer and social groups.	Slight impairment in these activities.	Unable to function independently at these activities, although may still be engaged in some; appears normal to casual inspection.	No pretense of independent function outside the home; appears well enough to be taken to functions outside the family home.	No pretense of independent function outside the home; appears too ill to be taken to functions outside the family home.
5. HOME & HOBBIES __ . __	Life at home, hobbies, and intellectual interests well maintained.	Life at home, hobbies, and intellectual interests slightly impaired.	Mild but definite impairment of function at home; more difficult chores abandoned; more complicated hobbies and interests abandoned.	Only simple chores preserved; very restricted interests, poorly maintained.	No significant function in the home.
6. PERSONAL CARE __ . __	Fully capable of self-care (= 0).		Needs prompting.	Requires assistance in dressing, hygiene, keeping of personal effects.	Requires much help with personal care; frequent incontinence.
7. __ __ . __ **CDR SUM OF BOXES**					
8. __ . __ **GLOBAL CDR**					

[1] Morris JC. The Clinical Dementia Rating (CDR): Current version and scoring rules. *Neurology* 43(11):2412-4, 1993.

Form B5: BEHAVIORAL ASSESSMENT – NEUROPSYCHIATRIC INVENTORY QUESTIONNAIRE (NPI-Q[1])

ADC personnel must be certified as an NPI-Q interviewer through the online training system developed by the University of California Los Angeles and NACC. The NPI-Q Interviewer Certification system may be accessed through the NACC website at https://www.alz.washington.edu/npiq/signin.html. The procedures established in the training system must be followed to complete this form.

Please ask the following questions based upon changes. Indicate "yes" only if the symptom has been present in the past month; otherwise, indicate "no".

For each item marked "yes", rate the SEVERITY of the symptom (how it affects the patient): 1 = Mild (noticeable, but not a significant change)
2 = Moderate (significant, but not a dramatic change)
3 = Severe (very marked or prominent; a dramatic change)

1. NPI informant: ☐ 1 Spouse ☐ 2 Child ☐ 3 Other (specify): _____

		Yes	No		Severity		
2. DELUSIONS: Does the patient believe that others are stealing from him or her, or planning to harm him or her in some way?	2a.	☐ 1	☐ 0	2b.	☐ 1	☐ 2	☐ 3
3. HALLUCINATIONS: Does the patient act as if he or she hears voices? Does he or she talk to people who are not there?	3a.	☐ 1	☐ 0	3b.	☐ 1	☐ 2	☐ 3
4. AGITATION OR AGGRESSION: Is the patient stubborn and resistive to help from others?	4a.	☐ 1	☐ 0	4b.	☐ 1	☐ 2	☐ 3
5. DEPRESSION OR DYSPHORIA: Does the patient act as if he or she is sad or in low spirits? Does he or she cry?	5a.	☐ 1	☐ 0	5b.	☐ 1	☐ 2	☐ 3
6. ANXIETY: Does the patient become upset when separated from you? Does he or she have any other signs of nervousness, such as shortness of breath, sighing, being unable to relax, or feeling excessively tense?	6a.	☐ 1	☐ 0	6b.	☐ 1	☐ 2	☐ 3
7. ELATION OR EUPHORIA: Does the patient appear to feel too good or act excessively happy?	7a.	☐ 1	☐ 0	7b.	☐ 1	☐ 2	☐ 3
8. APATHY OR INDIFFERENCE: Does the patient seem less interested in his or her usual activities and in the activities and plans of others?	8a.	☐ 1	☐ 0	8b.	☐ 1	☐ 2	☐ 3
9. DISINHIBITION: Does the patient seem to act impulsively? For example, does the patient talk to strangers as if he or she knows them, or does the patient say things that may hurt people's feelings?	9a.	☐ 1	☐ 0	9b.	☐ 1	☐ 2	☐ 3
10. IRRITABILITY OR LABILITY: Is the patient impatient or cranky? Does he or she have difficulty coping with delays or waiting for planned activities?	10a.	☐ 1	☐ 0	10b.	☐ 1	☐ 2	☐ 3
11. MOTOR DISTURBANCE: Does the patient engage in repetitive activities, such as pacing around the house, handling buttons, wrapping string, or doing other things repeatedly?	11a.	☐ 1	☐ 0	11b.	☐ 1	☐ 2	☐ 3
12. NIGHTTIME BEHAVIORS: Does the patient awaken you during the night, rise too early in the morning, or take excessive naps during the day?	12a.	☐ 1	☐ 0	12b.	☐ 1	☐ 2	☐ 3
13. APPETITE AND EATING: Has the patient lost or gained weight, or had a change in the food he or she likes?	13a.	☐ 1	☐ 0	13b.	☐ 1	☐ 2	☐ 3

[1]

Form B6: BEHAVIORAL ASSESSMENT – GERIATRIC DEPRESSION SCALE (GDS[1])

The form is intended for completion by clinician/clinic staff as a direct subject interview. The form is not to be administered to the informant. If your Center prefers to administer the entire 30-item GDS, please first administer this 15-item form and score appropriately; then administer the remaining 15 items on a separate non-UDS form.

The Geriatric Depression Scale was developed by Stanford University as a basic screening measure for depression in older adults. Further information is available online at http://www.stanford.edu/~yesavage/GDS.html.

☐ Check this box and enter "88"(did not complete) below for the Total GDS Score only if the subject 1) does not attempt the GDS, or 2) does not answer four or more of the questions.

Instruct the subject: "In the next part of this interview, I will ask you questions about your feelings. Some of the questions I will ask you may not apply, and some may make you feel uncomfortable. For each question, please answer "yes" or "no", depending on how you have been feeling **in the past week, including today**."

In the past week:		**Yes**	**No**
1.	Are you basically satisfied with your life?	0	1
2.	Have you dropped many of your activities and interests?	1	0
3.	Do you feel that your life is empty?	1	0
4.	Do you often get bored?	1	0
5.	Are you in good spirits most of the time?	0	1
6.	Are you afraid that something bad is going to happen to you?	1	0
7.	Do you feel happy most of the time?	0	1
8.	Do you often feel helpless?	1	0
9.	Do you prefer to stay at home, rather than going out and doing new things?	1	0
10.	Do you feel you have more problems with memory than most?	1	0
11.	Do you think it is wonderful to be alive now?	0	1
12.	Do you feel pretty worthless the way you are now?	1	0
13.	Do you feel full of energy?	0	1
14.	Do you feel that your situation is hopeless?	1	0
15.	Do you think that most people are better off than you are?	1	0

16. Sum all circled answers for a Total GDS Score (maximum score = 15) (*did not complete = 88*) — —

Calculate the sum of values for all circled answers and enter the total score in the space provided. The calculation may include a maximum of 3 missing items, and the final sum must be prorated for the number of missing items (see instructions below for prorating scores). If more than 3 items are missing, however, the test must be considered incomplete and the Total GDS Score coded "88".

Prorating scores (what to do if the subject misses up to 3 items): If up to 3 of the 15 items are missing, add the total score on the completed items plus an estimated score for the missing items to get a total score. The estimated score for missing items is calculated as:

Total score of completed items/(# of completed items) * (# of missing items)

You may get a fractional answer that requires rounding. For example, if the subject got a score of 4 for 12 completed items, then the estimated total score is 4 + [(4/12) * 3] = 5.

[1] Sheikh JI, Yesavage JA. Geriatric Depression Scale (GDS): Recent evidence and development of a shorter version. Clinical Gerontology: A Guide to Assessment and Intervention 165-173, NY: The Haworth Press, 1986. Reproduced by permission of the publisher.

Form B7: FUNCTIONAL ASSESSMENT – FUNCTIONAL ASSESSMENT QUESTIONNAIRE (FAQ[1])

Circle the most accurate representation of the subject's level of ability to perform each activity over the preceding four weeks, based on the informant's assessment.

In the past four weeks, did the subject have any difficulty or need help with:	Not applicable (e.g., never did)	Normal	Has difficulty, but does by self	Requires assistance	Dependent
1. Writing checks, paying bills, or balancing a checkbook.	8	0	1	2	3
2. Assembling tax records, business affairs, or other papers.	8	0	1	2	3
3. Shopping alone for clothes, household necessities, or groceries.	8	0	1	2	3
4. Playing a game of skill such as bridge or chess, working on a hobby.	8	0	1	2	3
5. Heating water, making a cup of coffee, turning off the stove.	8	0	1	2	3
6. Preparing a balanced meal.	8	0	1	2	3
7. Keeping track of current events.	8	0	1	2	3
8. Paying attention to and understanding a TV program, book, or magazine.	8	0	1	2	3
9. Remembering appointments, family occasions, holidays, medications.	8	0	1	2	3
10. Traveling out of the neighborhood, driving, or arranging to take public transportation.	8	0	1	2	3

Self-explanatory. If the informant indicates that the subject no longer does a particular task, it is reasonable to probe further and ask if they think the subject could still do the task. This will help tease out the relevant cognitive impairment.

[1] Pfeffer RI, Kurosaki TT, Harrah CH, et al. Measurement of functional activities of older adults in the community. *J Gerontol* 37:323-9, 1982.

Form B8: EVALUATION – PHYSICAL/NEUROLOGICAL EXAM FINDINGS

The purpose of this form is to describe the overall physical/neurological exam findings (non-cognitive, non-behavior based). The form should be completed by the clinician, based on review of all examinations and findings for the current visit.

PHYSICAL/NEUROLOGICAL EXAM FINDINGS	Yes	No	Unknown
1. Are all findings unremarkable (normal or normal for age)?	☐ 1	☐ 0	☐ 9
2. Are focal deficits present indicative of central nervous system disorder?	☐ 1	☐ 0	☐ 9
3. Is gait disorder present indicative of central nervous system disorder?	☐ 1	☐ 0	☐ 9
4. Are there eye movement abnormalities present indicative of central nervous system disorder?	☐ 1	☐ 0	☐ 9
Check number 9 only if there is no information available to the clinician.			

Form B9: CLINICIAN JUDGMENT OF SYMPTOMS

The purpose of this form is to provide clinical determination of the onset of symptoms. The form should be completed by the clinician, and conclusions should be based on information obtained through subject, informant, medical records and/or observation. Neuropsychological test battery (except for the MMSE) and imaging results should not be used to determine answers for this form, but should be used to make the official clinical diagnosis on Form D1.

MEMORY COMPLAINT/AGE OF ONSET:	**Yes**	**No**
1. Does the subject report a decline in memory?	☐ 1	☐ 0
Decline refers to cognitive changes in the subject's usual or customary memory function. Check "yes" if the subject reports a current (i.e., recent) decline in memory function. This question refers to memory only and not behavior, motor, or other non-memory symptoms.		
2. Does the informant report a decline in subject's memory?	☐ 1	☐ 0
Decline refers to cognitive changes in the subject's usual or customary memory function. Check "yes" if the informant reports a current (i.e., recent) decline in the subject's memory function. This question refers to memory only and not behavior, motor, or other non-memory symptoms. If there is no informant, leave this question blank.		
3a. Does the clinician believe there has been a current meaningful decline in the subject's memory, non-memory cognitive abilities, behavior, or ability to manage his/her affairs?	☐ 1	☐ 0 (*If no, end form here*)
Decline refers to cognitive changes in the subject's usual or customary memory function. If the clinician is certain that there has been no meaningful decline (i.e., clinically significant) in the subject's memory, non-memory cognitive abilities, behavior, or ability to manage affairs, check "no" and do not complete the remainder of this form. If the clinician is certain that there has been a meaningful decline, check "yes" and continue on to question 3b. If the clinician is uncertain whether there has been a meaningful decline, s/he should first complete questions 4 through 14 and then answer questions 3a and 3b.		
3b. At what age did the decline begin (based upon the clinician's assessment)?	___ ___ (*999=Unknown*)	
If unable to determine the subject's age at onset, enter "999".		

COGNITIVE SYMPTOMS:	**Yes**	**No**	**Unknown**
4. Has there been a meaningful decline in the subject's usual abilities for any of the following?:			
a. **Memory** (For example, does s/he forget conversations and/or dates; repeat questions and/or statements; misplace more than usual; forget names of people s/he knows well?)	☐ 1	☐ 0	☐ 9
b. **Judgment and problem-solving** (For example, does s/he have trouble handling money (tips); paying bills; shopping; preparing meals; handling appliances; handling medications; driving?)	☐ 1	☐ 0	☐ 9
c. **Language** (For example, does s/he have hesitant speech; have trouble finding words; use inappropriate words without self-correction?)	☐ 1	☐ 0	☐ 9
d. **Visuospatial function** (For example, does s/he have difficulty interpreting visual stimuli; finding his/her way around; using utensils; dressing/grooming; telling time?)	☐ 1	☐ 0	☐ 9

(continued on next page)

e. **Attention/concentration** (For example, does the subject have a short attention span or ability to concentrate? Is s/he easily distracted?)	☐ 1	☐ 0	☐ 9
f. **Other** (*If yes, then specify*): _____	☐ 1	☐ 0	☐ 9

Self-explanatory. Check number 9 only if the answer cannot be determined based upon information gathered from the subject, informant, medical records, and/or observation.

If the subject exhibits a meaningful decline in any ability (or abilities) other than those listed, briefly describe under item f, "Other" and check number 1.

5. Indicate the predominant symptom which was first recognized as a decline in the subject's cognition:

☐ 1 Memory
☐ 2 Judgment and problem solving
☐ 3 Language
☐ 4 Visuospatial function
☐ 5 Attention/concentration
☐ 6 Other (*specify*): _____
☐ 88 N/A
☐ 99 Unknown

This question refers to the onset of the cognitive change (i.e., when change in cognition was first noticed). If the informant or available information indicates that several symptoms occurred simultaneously, the clinician must ask the informant and/or use his/her best clinical judgment to commit to one of the symptoms as the predominant symptom.

If the predominant cognitive symptom first recognized as a decline was other than those listed, check number 6 and briefly describe in the space provided.

Check number 88 if there was no decline in the subject's cognition.

Check number 99 only if clinician is unable to ascertain the cognitive symptom predominant at onset, based on available information or observation.

6. Mode of onset of cognitive symptoms:

☐ 1 Gradual (*> 6 months*)
☐ 2 Subacute (*≤ 6 months*)
☐ 3 Abrupt (*within days*)
☐ 4 Other (*specify*): _____
☐ 88 N/A
☐ 99 Unknown

This question refers to the onset of the cognitive change (i.e., when change in cognition was first noticed). The clinician should choose the option that most closely resembles the mode of onset of cognitive symptoms for the subject.

If the mode of onset was other than those listed, check number 4 and briefly describe in the space provided.

Check number 88 if there was no decline in the subject's cognition.

Check number 99 only if no information is available to allow the clinician to ascertain the mode of onset.

BEHAVIOR SYMPTOMS:	**Yes**	**No**	**Unknown**
7. Which of the following meaningful changes in behavior have been present during the course of the illness?			
a. **Apathy/withdrawal** (Has the subject lost interest in or displayed a reduced ability to initiate usual activities and social interaction, such as conversing with family and/or friends?)	☐ 1	☐ 0	☐ 9

(continued on next page)

b. **Depression** (Has the subject seemed depressed for more than two weeks at a time; e.g., loss of interest or pleasure in nearly all activities; sadness, hopelessness, loss of appetite, fatigue?)	☐ 1	☐ 0	☐ 9
c. **Psychosis**			
1) Visual hallucinations	☐ 1	☐ 0	☐ 9
2) Auditory hallucinations	☐ 1	☐ 0	☐ 9
3) Abnormal/false/delusional beliefs	☐ 1	☐ 0	☐ 9
d. **Disinhibition** (Does the subject use inappropriate coarse language or exhibit inappropriate speech or behaviors in public or in the home? Does s/he talk personally to strangers or have disregard for personal hygiene?)	☐ 1	☐ 0	☐ 9
e. **Irritability** (Does the subject overreact, such as shouting at family members or others?)	☐ 1	☐ 0	☐ 9
f. **Agitation** (Does the subject have trouble sitting still; does s/he shout, hit, and/or kick?)	☐ 1	☐ 0	☐ 9
g. **Personality change** (Does the subject exhibit bizarre behavior or behavior uncharacteristic of the subject, such as unusual collecting, suspiciousness [without delusions], unusual dress, or dietary changes? Does the subject fail to take other's feelings into account?)	☐ 1	☐ 0	☐ 9
h. **Other** (*If yes, then specify*): _____	☐ 1	☐ 0	☐ 9

If these symptoms have been present during the course of the illness, even if they are not present at the time of the assessment, the answer is "yes". For example, if hallucinations or delusional beliefs were present in the past but are no longer present, check number 1. Check "unknown" (number 9) only if the answer cannot be determined based upon information gathered from the subject, informant, medical records, and/or observation.

If the subject exhibits a meaningful decline in any behavior other than those listed, briefly describe under item h, "Other" and check number 1.

8. Indicate the predominant symptom which was first recognized as a decline in the subject's behavioral symptoms:

☐ 1 Apathy/ withdrawal
☐ 2 Depression
☐ 3 Psychosis
☐ 4 Disinhibition
☐ 5 Irritability
☐ 6 Agitation
☐ 7 Personality change
☐ 8 Other (*specify*): _____
☐ 88 N/A
☐ 99 Unknown

This question refers to the subject's symptoms at onset of behavior change. If the informant or available information indicates that several symptoms occurred simultaneously, the clinician must ask the informant and/or use his/her best clinical judgment to commit to one of the symptoms as the predominant symptom.

If the predominant behavioral symptom first recognized as a decline was other than those listed, check number 8 and briefly describe in the space provided.

Check number 88 if there was no decline in the subject's behavior.

Check number 99 only if clinician is unable to ascertain the behavioral symptom predominant at onset, based on available information or observation.

9. Mode of onset of behavioral symptoms:	☐ 1 Gradual (> *6 months*)	☐ 4 Other (*specify*): _____	
	☐ 2 Subacute (≤ *6 months*)	☐ 88 N/A	
	☐ 3 Abrupt (*within days*)	☐ 99 Unknown	

The clinician should choose the option that most closely resembles the mode of onset of behavioral symptoms for the subject.

If the mode of onset was other than those listed, check number 4 and briefly describe in the space provided.

Check number 88 if there was no decline in the subject's behavior.

Check number 99 only if no information is available to allow the clinician to ascertain the mode of onset.

MOTOR SYMPTOMS:	**Yes**	**No**	**Unknown**
10. Which of the following meaningful changes in motor function have been present during the course of the illness?			
a. **Gait disorder** (Has the subject's walking changed, not specifically due to arthritis or an injury? Is s/he unsteady, or does s/he shuffle when walking, have little or no arm-swing, or drag a foot?)	☐ 1	☐ 0	☐ 9
b. **Falls** (Does the subject fall more than usual?)	☐ 1	☐ 0	☐ 9
c. **Tremor** (Has the subject had rhythmic shaking, especially in the hands, arms, legs, head, mouth, or tongue?)	☐ 1	☐ 0	☐ 9
d. **Slowness** (Has the subject noticeably slowed down in walking or moving or handwriting, other than due to an injury or illness? Has his/her facial expression changed, or become more "wooden" or masked and unexpressive?)	☐ 1	☐ 0	☐ 9

If these symptoms have been present during the course of the illness, even if they are not present at the time of the assessment, the answer is "yes". For example, if the subject was shuffling when walking in the past but is no longer exhibiting this symptom, check number 1. Check "unknown" (number 9) only if the answer cannot be determined based upon information gathered from the subject, informant, medical records, and/or observation.

11. Indicate the predominant symptom which was first recognized as a decline in the subject's motor symptoms:	☐ 1 Gait disorder	☐ 4 Slowness
	☐ 2 Falls	☐ 88 N/A
	☐ 3 Tremor	☐ 99 Unknown

This question refers to the subject's symptoms at onset of decline in motor function. If the informant or available information indicates that several symptoms occurred simultaneously, the clinician must ask the informant and/or use his/her best clinical judgment to commit to one of the symptoms as the predominant symptom.

Check number 99 only if clinician is unable to ascertain the motor symptom predominant at onset, based on available information or observation.

12. Mode of onset of motor symptoms:	☐ 1	Gradual (> *6 months*)	☐ 4	Other (*specify*): _____
	☐ 2	Subacute (≤ *6 months*)	☐ 88	N/A
	☐ 3	Abrupt (*within days*)	☐ 99	Unknown

Check the option that most closely resembles the mode of onset of motor symptoms for the subject.

If the mode of onset was other than those listed, check number 4 and briefly describe in the space provided.

Check number 88 if there was no decline in the subject's behavior.

Check number 99 only if no information is available to allow the clinician to ascertain the mode of onset.

13. Course of overall cognitive/behavioral/ motor syndrome:	☐ 1	Gradually progressive	☐ 4	Fluctuating
	☐ 2	Stepwise	☐ 5	Improved
	☐ 3	Static	☐ 9	Unknown

Check the appropriate number to indicate the overall decline in cognitive/behavioral/ motor functions during the course of the illness.

Check number 9 only if no information is available to allow the clinician to describe the overall course of the syndrome.

14. Indicate the <u>predominant</u> domain which was first recognized as changed in the subject:	☐ 1	Cognition	☐ 3	Motor function
	☐ 2	Behavior	☐ 9	Unknown

Check the appropriate number to indicate which domain appears to be the first to have changed in the subject. Choose only <u>one</u> domain as predominantly changing first, based on the clinician's best judgment.

Check number 9 only if no information is available to allow the clinician to describe the predominantly changed domain.

Form C1: MMSE AND NEUROPSYCHOLOGICAL BATTERY

This form should be completed by ADC or clinic staff, based on subject response. If the subject cannot complete a particular exam, refer to the appropriate key for coding entry. Worksheets and instructions referenced below and included in the Appendix are based on those provided in the Multiplex Family Study Procedures Manual (created by Columbia University for the Alzheimer's Disease Genetics Initiative) and adapted by the Alzheimer's Disease Neuroimaging Initiative.

The MMSE can be administered by the clinician during the neurological evaluation or by the neuropsychometrist/clinic staff as part of the neuropsychological test batter. In either case, the MMSE must be administered exactly as shown in the UDS Appendix (pages 2–7).

KEY: If the subject cannot complete any of the following exams, please use the following codes for the test scores (except the Trail Making Test):

95 = Physical problem
96 = Cognitive/behavior problem
97 = Other problem
98 = Verbal refusal

1. **Mini Mental State Examination**

1a. The administration of the MMSE was: ☐ 1 In ADC/ clinic ☐ 2 In home ☐ 3 In person–other

1) Language of MMSE administration: ☐ 1 English ☐ 2 Spanish ☐ 3 Other (specify): _____

Indicate the primary language used when administering the MMSE test.

1b. Orientation subscale scores:

1) Time: __ __ (0–5) *see Key*

2) Place: __ __ (0–5) *see Key*

1c. Total MMSE score (using D-L-R-O-W) __ __ (0–30) *see Key*

The Mini-Mental State Examination is a screening scale that evaluates orientation to place, orientation to time, registration (immediate repetition of three words), attention and concentration (spelling D-L-R-O-W), recall (recalling the previously repeated three words), language (naming, repetition, reading, writing, comprehension), and visual construction (copy two intersecting pentagons). The MMSE is scored as the number of correctly completed items, with lower scores indicative of poorer performance and greater cognitive impairment.

Follow the instructions beginning on Appendix page 2 and complete a copy of the worksheet located in the tabbed section entitled "UDS Npsych Test Forms". Compute the total scores for Orientation to Time, Orientation to Place, and Total MMSE Score, and enter those numbers in the spaces provided on NACC UDS Form C1, items 1b.1, 1b.2, and 1c, respectively.

It is intended that the tests be administered in the order in which they appear below **even if they were previously administered at a recent clinic screening**. This is necessary in order to standardize among Centers the delay intervals for testing memory, and also to eliminate any differences due to the order of test administration. It is therefore suggested that the UDS be administered in its entirety either before or after the administration of other tests commonly used by the Center.

2. The remainder of the battery (below) was administered: ☐ 1 In ADC/ clinic ☐ 2 In home ☐ 3 In person–other

Self-explanatory.

2a. Language of test administration: ☐ 1 English ☐ 2 Spanish ☐ 3 Other (specify): _____

Indicate the primary language used when administering the remainder of the tests.

3. **Logical Memory IA – Immediate**

3a. If this test has been administered to the subject within the past 3 months, specify the date previously administered: __ __/__ __/__ __ __ __

This test is a measure of memory (declarative/episodic) in which a brief story is read to the subject, who is then asked to retell it from memory immediately. The primary measure of performance is the number of story units recalled. Alternate paragraphs for the Logical Memory stories are not available, so as not to introduce more variability.

Enter the date of administration if the subject has completed this test within the three months prior to the current visit.

3b. Total score from the previous test administration: __ __ (0–25; 88 = N/A)

If the test was administered in the past three months, enter the score here. If the test has not been administered within the past three months, enter "88".

3c. Total number of story units recalled from this current test administration: __ __ (0–25) *see Key*

Follow the instructions beginning on Appendix page 8, complete a copy of the worksheet located in the tabbed section entitled "UDS Npsych Test Forms" and enter the total score here.

4. **Digit Span Forward**

4a. Total number of trials correct prior to two consecutive errors at the same digit length: __ __ (0–12) *see Key*

4b. Digit span forward length: __ __ (0–8) *see Key*

This is a widely used test of working memory (or attention) in which the subject is read number sequences of increasing length and asked to repeat them. The digit span forward length is the length of the highest digit sequence the subject is able to repeat correctly.

Follow the instructions beginning on Appendix page 12, complete a copy of the worksheet located in the tabbed section entitled "UDS Npsych Test Forms", and enter here the number of total correct trials and the digit span forward length.

5. **Digit Span Backward**

5a. Total number of trials correct prior to two consecutive errors at the same digit length: __ __ (0–12) *see Key*

5b. Digit span backward length: __ __ (0–7) *see Key*

This is a widely used measure of working memory (or attention) in which the subject is read number sequences of increasing length and then asked to repeat each sequence backward. The primary measure of performance is the number of digit sequences correctly reversed. The digit span backward length is the length of the highest digit sequence the subject is able to reverse.

Follow the instructions beginning on Appendix page 14, complete a copy of the worksheet located in the tabbed section entitled "UDS Npsych Test Forms", and enter here the total number of correct trials and the digit span backward length.

6. **Category Fluency**

6a. Animals – Total number of animals named in 60 seconds: __ __ (0–77) *see Key*

6b. Vegetables – Total number of vegetables named in 60 seconds: __ __ (0–77) *see Key*

This is a widely used measure of semantic memory (verbal fluency, language). The subject is asked to name different exemplars of a given semantic category, and the number of unique exemplars named is scored.

Follow the instructions beginning on Appendix page 18, complete a copy of the two worksheets located in the tabbed section entitled "UDS Npsych Test Forms", and enter the appropriate score for each test here.

KEY 2: If necessary, use the following codes for the Trail Making Test only:

995 = Physical problem
996 = Cognitive/behavior problem
997 = Other problem
998 = Verbal refusal

7. **Trail Making Test**

7a. Part A–Total number of seconds to complete (if not finished by 150 seconds, enter 150): __ __ __ (0–150) *see Key 2*

7b. Part B–Total number of seconds to complete (if not finished by 300 seconds, enter 300): __ __ __ (0–300) *see Key 2*

This is a test of processing speed and executive function. Although both Parts A and B depend on visuomotor and perceptual-scanning skills, Part B also requires considerable cognitive flexibility in shifting from number to letter sets under time pressure.

Follow the instructions beginning on Appendix page 22, complete a copy of the worksheet located in the tabbed section entitled "UDS Npsych Test Forms". Enter the appropriate score for each test here.

8. **WAIS-R Digit Symbol**

8a. Total number of items correctly completed in 90 seconds: __ __ (0–93) *see Key*

This subtest of the WAIS-R engages multiple cognitive abilities, including attention, psychomotor speed, complex scanning, visual tracking, and immediate memory.

Follow the instructions beginning on Appendix page 29, complete a copy of the worksheet located in the tabbed section entitled "UDS Npsych Test Forms", and enter the appropriate score here.

9. **Logical Memory IIA – Delayed**

9a. Total number of story units recalled: __ __ (0–25) *see Key*

9b. Time elapsed since Logical Memory IA – Immediate: — — (0–85 minutes) (*88 = N/A*) (*99 = Unknown*)

This is a measure of delayed recall (episodic memory) of the story read to the participant at the beginning of the testing session.

Follow the instructions beginning on Appendix page 31, complete a copy of the worksheet located in the tabbed section entitled "UDS Npsych Test Forms", and enter here the total score and the number of minutes elapsed following the administration of *Logical Memory IA-Immediate*. (Note: Aim for a 20-minute delay; if 20 minutes have not elapsed, do not add other tests to fill the interval. Administer *Logical Memory IIA – Delayed* and enter the actual time that elapsed.)

If *Logical Memory IIA – Delayed* was not attempted or not completed, enter "88" for item 9b.

Enter "99" (Unknown) if the time elapsed was not recorded or improperly recorded.

10. **Boston Naming Test (30 Odd-numbered items)**

10a. Total score: __ __ (0–30) *see Key*

The Boston Naming Test is a measure of the ability to orally label (name) line drawings of objects. This test is sensitive to aphasia and also to object recognition deficits.

Follow the instructions beginning on Appendix page 33, complete a copy of the worksheet located in the tabbed section entitled "UDS Npsych Test Forms", and enter the total score here. (You may elect to administer the 60-item test, but only the 30 odd-numbered items should be scored for the UDS.)

11. **Overall Appraisal**

11a. Based on the neuropsychological examination, the subject's cognitive status is deemed:

☐ 1 Better than normal for age

☐ 2 Normal for age

☐ 3 One or two test scores abnormal

☐ 4 Most test scores are abnormal or lower than expected

☐ 0 Clinician unable to render opinion

The interpretation of neuropsychological test performance can be influenced by many factors (e.g., prior cognitive ability, education, racial/ethnic variables), including the subject's level of cooperation and motivation. This item is included to obtain the clinical neuropsychologist's opinion of the subject's performance, based not only on the UDS but also on all other testing that has been done on the subject at the ADC. Based on the examination, the clinician is asked to rate the cognitive status as:

1) Better than normal for age: most test scores are at a level above what is considered average for age and education based on available commonly used clinical norms;

2) Normal for age: most test scores fall at least in what is considered the average range for age and education;

3) One or two test scores abnormal: most scores are normal or better but one or two are distinctly abnormal;

4) Most test scores are abnormal or lower than expected: the majority of scores are in the abnormal range for age and education OR in someone who is previously very high functioning, the scores are beneath expectation, albeit not distinctly abnormal;

0) Clinician is unable to render an opinion based on exam and test results.

Form D1: CLINICIAN DIAGNOSIS – COGNITIVE STATUS AND DEMENTIA

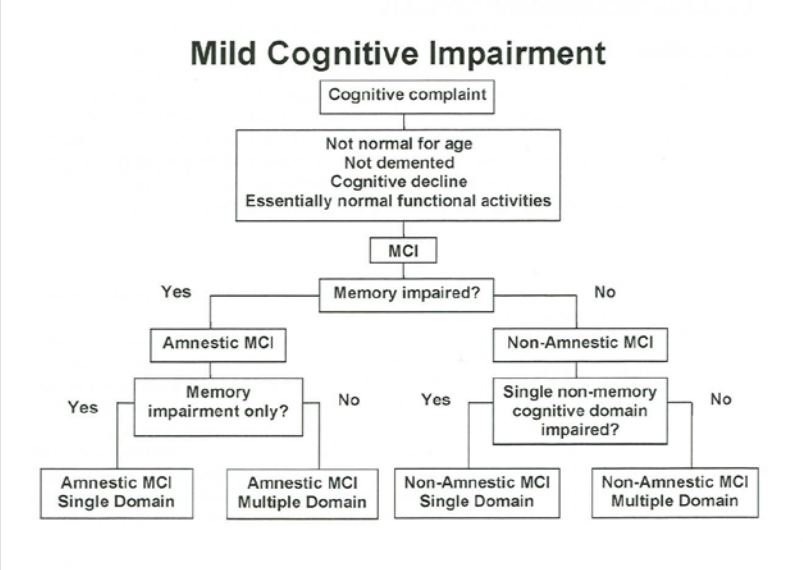
The purpose of this form is to record a diagnosis of the subject's current status relative to cognition and dementia. The form should be completed by the clinician, based on a review of all available information.

1.	Responses are based on:	☐ 1 Diagnosis from single clinician	☐ 2 Consensus diagnosis

2.	Does the subject have normal cognition (no MCI, dementia, or other neurological condition resulting in cognitive impairment)?	☐ 1 Yes (*If yes, skip to #13*	☐ 0 No (*If no, continue to #3*)
3.	Does the subject meet criteria for dementia (in accordance with standard criteria for dementia of the Alzheimer's type or for other non-Alzheimer's dementing disorders)?	☐ 1 Yes (*If yes, skip to #5*)	☐ 0 No (*If no, continue to #4*)

The purpose of this form is to record a diagnosis of the subject's current status relative to cognition and dementia. The form should be completed by the clinician, based on a review of all available information.

After having determined that the subject does not have normal cognition (item #2 above) and does not have dementia (item #3 above), please use the following chart[1], excerpted from the Alzheimer's Disease Neuroimaging Initiative (ADNI) manual, page 18, to guide your answers to items 4a–4d:



First determine if memory impairment is present, based on your clinical judgment and/or neuropsychological memory test(s) (for example, logical memory sub-test of the WMS-R and/or other memory tests used at your ADC). Then apply the same clinical and/or psychometric approach to determine whether other cognitive domains are also impaired.

[1] *Arch Neurol*, 2005. 62;1160-63, Figure 1. Reproduced by permission of the publisher. Copyright© 2005. American Medical Association. All rights reserved.

4. If the subject does not have normal cognition and is not clinically demented, indicate the type of cognitive impairment (*Choose only <u>one</u> impairment from items 4a thru 4e as being "present"; mark <u>all others</u> "absent"*):

	Present	Absent
4a. Amnestic MCI – memory impairment only	☐ 1	☐ 0

If memory is impaired and memory is the <u>only</u> cognitive domain impaired, mark 4a as "present". (Note: Only <u>one</u> of items 4a–4e may be marked "present"; <u>all others</u> must be marked "absent".)

	Present	Absent	Domains	Yes	No
4b. Amnestic MCI – memory impairment plus one or more other domains (*if present, check one or more domain boxes "yes" and check all other domain boxes "no"*)	☐ 1	☐ 0	1) Language	☐ 1	☐ 0
			2) Attention	☐ 1	☐ 0
			3) Executive function	☐ 1	☐ 0
			4) Visuospatial	☐ 1	☐ 0

If memory is impaired, but is <u>not</u> the only cognitive domain impaired, mark 4b as "present", then mark on the list at right the other cognitive domain(s) which you judge to be impaired, based on your examination and/or neuropsychological tests.)

4c. Non-amnestic MCI – single domain (*if present, check only <u>one</u> domain box "yes"; check <u>all other</u> domain boxes "no"*)	☐ 1	☐ 0	1) Language	☐ 1	☐ 0
			2) Attention	☐ 1	☐ 0
			3) Executive function	☐ 1	☐ 0
			4) Visuospatial	☐ 1	☐ 0

If memory is <u>not</u> impaired, and <u>only one</u> other domain is impaired, mark 4c as "present" and mark on the list at right the <u>single</u> cognitive domain which you judge to be impaired, based on your examination and/or neuropsychological tests.)

4d. Non-amnestic MCI – multiple domains (*if present, check <u>two</u> or more domain boxes "yes" and check all other domain boxes "no"*)	☐ 1	☐ 0	1) Language	☐ 1	☐ 0
			2) Attention	☐ 1	☐ 0
			3) Executive function	☐ 1	☐ 0
			4) Visuospatial	☐ 1	☐ 0

(continued on next page)

If memory is <u>not</u> impaired, but <u>more than one</u> other cognitive domain is impaired, mark 4d as "present" and mark on the list at right each of those domains which you judge to be impaired, based on your examination and/or neuropsychological tests.)

4e. Impaired, not MCI	☐ 1	☐ 0

If you judge the subject to by cognitively impaired, but the subject's presentation, tests, symptoms, and clinical evaluation are <u>not consistent with MCI</u> and do not allow you to mark any of the above items (4a–4d) as "present", then mark 4e as "present".

Please indicate if the following conditions are present or absent. If present, also indicate if the condition is primary or contributing to the observed cognitive impairment, based on the clinician's best judgment.

Mark only <u>one</u> condition as primary.	**Present**	**Absent**		**If Present: Primary**	**Contributing**
5. Probable AD (NINCDS/ADRDA) (*if present, skip to item #7*)	☐ 1	☐ 0	5a.	☐ 1	☐ 2
6. Possible AD (NINCDS/ADRDA) (*if #5 is present, leave this blank*)	☐ 1	☐ 0	6a.	☐ 1	☐ 2

I. The criteria[1] for the clinical diagnosis of PROBABLE Alzheimer's disease include:
- dementia established by clinical examination and documented by the Mini-Mental Test, Blessed Dementia Scale, or some similar examination, and confirmed by neuropsychological tests;
- deficits in two or more areas of cognition;
- progressive worsening of memory and other cognitive functions;
- no disturbance of consciousness;
- onset between ages 40 and 90, most often after age 65; and
- absence of systemic disorders or other brain diseases that in and of themselves could account for the progressive deficit in memory and cognition.

II. The diagnosis of PROBABLE Alzheimer's disease is supported by:
- progressive deterioration of specific cognitive functions such as language (aphasia), motor skills (apraxia), and perception (agnosia);
- impaired activities of daily living and altered patterns of behavior;
- family history of similar disorders, particularly if confirmed neuropathologically; and
- laboratory results of:

  normal lumbar puncture as evaluated by standard techniques;

  normal pattern or nonspecific changes in EEG, such as increased slow-wave activity; and

  evidence of cerebral atrophy on CT with progression documented by serial observation.

III. Other clinical features consistent with the diagnosis of PROBABLE Alzheimer's disease, after exclusion of causes of dementia other than Alzheimer's disease, include:
- plateaus in the course of progression of the illness;
- associated symptoms of depression, insomnia, incontinence, delusions, illusions, hallucinations, catastrophic verbal, emotional, or physical outbursts, sexual disorders, and weight loss;
- other neurologic abnormalities in some patients, especially with more advance disease and including motor signs such as increased muscle tone, myoclonus, or gait disorder.
- seizures in advanced disease; and
- CT normal for age.

IV. Features that make the diagnosis of PROBABLE Alzheimer's disease uncertain or unlikely include:
- sudden, apoplectic onset;
- focal neurologic findings such as hemiparesis, sensory loss, visual field deficits, and incoordination early in the course of the illness; and
- seizures or gait disturbances at the onset or very early in the course of the illness.

(cont'd. on next page)

[1] McKhann G, Drachman D, Folstin M, Katzman R, Price D, and Stadlan EM. Clinical diagnosis of Alzheimer's disease: Report of the NINCDS-ADRDA Work Group under the auspices of Department of Health and Human Services Task Force on Alzheimer's Disease. *Neurology* 1984 July, (34) 939-944.

V. Clinical diagnosis of POSSIBLE Alzheimer's disease:
   - may be made on the basis of the dementia syndrome, in the absence of other neurologic, psychiatric, or systemic disorders sufficient to cause dementia, and in the presence of variations in the onset, in the presentation, or in the clinical course;
   - may be made in the presence of a second systemic or brain disorder sufficient to produce dementia, which is not considered to be *the* cause of the dementia; and
   - should be used in research studies when a single gradually progressive severe cognitive deficit is identified in the absence of other identifiable cause.

VI. Criteria for diagnosis of DEFINITE Alzheimer's disease are:
   - the clinical criteria for probable Alzheimer's disease and
   - histopathologic evidence obtained from a biopsy or autopsy.

VII. Classification of Alzheimer's disease for research purposes should specify features that may differentiate subtypes of the disorder, such as:
   - familial occurrence;
   - onset before age of 65;
   - presence of trisomy-21; and
   - coexistence of other relevant conditions such as Parkinson's disease.

Mark only one condition as primary.	Present	Absent		If Present: Primary	If Present: Contributing
7. Dementia with Lewy bodies	☐ 1	☐ 0	7a.	☐ 1	☐ 2

Revised (2005) criteria for the clinical diagnosis of dementia with Lewy bodies (DLB)[1]:

1. *Central feature* (essential for a diagnosis of possible or probable DLB):

   Dementia defined as progressive cognitive decline of sufficient magnitude to interfere with normal social or occupational function. Prominent or persistent memory impairment may not necessarily occur in the early stages but is usually evident with progression. Deficits on tests of attention, executive function, and visuospatial ability may be especially prominent.

2. *Core features* (two core features are sufficient for a diagnosis of probable DLB, one for possible DLB):
   - Fluctuating cognition with pronounced variations in attention and alertness.
   - Recurrent visual hallucinations that are typically well formed and detailed.
   - Spontaneous features of parkinsonism.

3. *Suggestive features* (If one or more of these is present in the presence of one or more core features, a diagnosis of probable DLB can be made. In the absence of any core features, one or more suggestive features is sufficient for possible DLB. Probable DLB should not be diagnosed on the basis of suggestive features alone):
   - REM sleep behavior disorder.
   - Severe neuroleptic sensitivity.
   - Low dopamine transporter uptake in basal ganglia demonstrated by SPECT or PET imaging.

4. *Supportive features* (commonly present but not proven to have diagnostic specificity):
   - Repeated falls and syncope.
   - Transient, unexplained loss of consciousness.
   - Severe autonomic dysfunction, e.g., orthostatic hypotension, urinary incontinence.
   - Hallucinations in other modalities.
   - Systematized delusions.
   - Depression.
   - Relative preservation of medial temporal lobe structures on CT/MRI scan.
   - Generalized low uptake on SPECT/PET perfusion scan with reduced occipital activity.
   - Abnormal (low uptake) MIBG myocardial scintigraphy.
   - Prominent slow wave activity on EEG with temporal lobe transient sharp waves.

5. A diagnosis of DLB is *less likely*:
   - In the presence of cerebrovascular disease evident as focal neurologic signs or on brain imaging.
   - In the presence of any other physical illness or brain disorder sufficient to account in part or in total for the clinical picture.
   - If parkinsonism only appears for the first time at a stage of severe dementia.

6. *Temporal sequence* of symptoms:

   DLB should be diagnosed when dementia occurs before or concurrently with parkinsonism (it if is present). The term Parkinson disease dementia (PDD) should be used to describe dementia that occurs in the context of well-established Parkinson disease. In a practice setting, the term that is most appropriate to the clinical situation should be used and generic terms such as LB disease are often helpful. In research studies in which distinction needs to be made between DLB and PDD, the existing 1-year rule between the onset of dementia and parkinsonism DLB continues to be recommended. Adoption of other time periods will simple confound data pooling or comparison between studies. In other research settings that may include clinicopathologic studies and clinical trials, both clinical phenotypes may be considered collectively under categories such as LB disease or alpha-synucleinopathy.

(For more information on the criteria above, visit the website of the Lewy Body Dementia Association at http://www.lewybodydementia.org/lbdsymptoms.shtml.)

[1] McKeith IG, Dickson DW, Lowe J, et al. Diagnosis and Management of Dementia with Lewy Bodies: Third report of the DLB Consortium, Neurology 2005; 65:1863-72.

Mark only one condition as primary.	Present	Absent		If Present: Primary	If Present: Contributing
8. Vascular dementia (NINDS/AIREN Probable)	☐ 1	☐ 0	8a.	☐ 1	☐ 2

This category is for dementia subjects that meet Probable NINDS-AIREN criteria for vascular dementia, which should therefore be designated as the primary etiology of the dementia. For mixed dementias or subjects meeting only Possible NINDS-AIREN criteria for vascular dementia, check number 1 ("present") for Question 23 below and indicate that stroke is contributory to the cognitive impairment.

NINDS-AIREN criteria for the diagnosis of vascular dementia[1]:

I. The criteria for the clinical diagnosis of *probable* vascular dementia include *all* of the following:

Dementia defined by cognitive decline from a previously higher level of functioning and manifested by impairment of memory and of two or more cognitive domains (orientation, attention, language, visuospatial functions, executive functions, motor control, and praxis), preferable established by clinical examination and documented by neuropsychological testing; deficits should be severe enough to interfere with activities of daily living not due to physical effects of stroke alone.

Exclusion criteria: cases with disturbance of consciousness, delirium, psychosis, severe aphasia, or major sensorimotor impairment precluding neuropsychological testing. Also excluded are systemic disorders or other brain diseases (such as AD) that in and of themselves could account for deficits in memory and cognition.

Cerebrovascular disease, defined by the presence of focal signs on neurologic examination, such as hemiparesis, lower facial weakness, Babinski sign, sensory deficit, hemianopia, and dysarthria consistent with stroke (with or without history of stroke), and evidence of nof relevant CVD by brain imaging (CT or MRI) including *multiple large vessel infarcts* or a *single strategically placed infarct* (angular gyrus, thalamus, basal forebrain, or PCA or ACA territories), as well as *multiple basal ganglia* and *white matter lacunes*, or *extensive periventricular white matter lesions*, or combinations thereof.

A relationship between the above two disorders, manifested or inferred by the presence of one or more of the following: (a) onset of dementia within 3 months following a recognized stroke; (b) abrupt deterioration in cognitive functions; or fluctuating, stepwise progression of cognitive deficits.

II. Clinical features consistent with the diagnosis of *probable* vascular dementia include the following:

(a) Early presence of gait disturbance (small-step gait or marche a petits pas, or magnetic, apraxic-ataxic or parkinsonian gait); (b) history of unsteadiness and frequent, unprovoked falls; (c) early urinary frequency, urgency, and other urinary symptoms not explained by urologic disease; (d) pseudobulbar palsy; and (e) personality and mood changes, abulia, depression, emotional incontinence, or other subcortical deficits including psychomotor retardation and abnormal executive function.

III. Features that make the diagnosis of vascular dementia uncertain or unlikely include (a) early onset of memory deficit and progressive worsening of memory deficit and progressive worsening of memory and other cognitive functions such as language (transcortical sensory aphasia), motor skills (apraxia), and perception (agnosia), in the absence of corresponding focal lesions on brain imaging; (b) absence of focal neurological signs, other than cognitive disturbance; and (c) absence of cerebrovascular lesions on brain CT or MRI.

IV. Clinical diagnosis of *possible* vascular dementia may be made in the presence of dementia (section I-1) with focal neurologic signs in patients in whom brain imaging studies to confirm definite CVD are missing; or in the absence of clear temporal relationship between dementia and stroke; or in patients with subtle onset and variable course (plateau or improvement) of cognitive deficits and evidence of relevant CVD.

[1] Roman GC, Tatemichi TK, Erkinjuntti T, Cummings JL, Masdeu JC, Garcia JH, Amaducci L, Orgogozo JM, Brun A, Hofman A, et al. Vascular dementia: diagnostic criteria for research studies. Report of the NINDS-AIREN International Workshop. *Neurology* 1993 Feb,43(2):250-60.

(continued on next page)

V. Criteria for diagnosis of *definite* vascular dementia are (a) clinical criteria for *probable* vascular dementia; (b) histopathologic evidence of CVD obtained from biopsy or autopsy; (c) absence of neurofibrillary tangles and neuritic plaques exceeding those expected for age; and (d) absence of other clinical or pathological disorder capable of producing dementia.

VI. Classification of vascular dementia for research purposes may be made on the basis of clinical, radiologic, and neuropathologic features, for subcategories or defined conditions such as cortical vascular dementia, subcortical vascular dementia, BD, and thalamic dementia.

The term "AD *with* CVD" should be reserved to classify patients fulfilling the clinical criteria for possible AD and who also present clinical or brain imaging evidence of relevant CVD. Traditionally, these patients have been included with VaD in epidemiologic studies. The term "mixed dementia," used hitherto, should be avoided.

Mark only <u>one</u> condition as primary.		**Present**	**Absent**		**If Present:**		
						Primary	**Contributing**
9.	Alcohol-related dementia	☐ 1	☐ 0		9a.	☐ 1	☐ 2
	Refer to the DSM-IV manual.[1]						

10.	Dementia of undetermined etiology	☐ 1	☐ 0		10a.	☐ 1	☐ 2
	Refer to the DSM-IV manual.						

[1] Diagnostic and statistical manual of mental disorders (DSM-IV). 4th ed. 1994, Washington, DC: American Psychiatric Association.

Use the following criteria to guide your answers to item 11:

Frontotemporal Lobar Degeneration:
A Consensus on Clinical Diagnostic Criteria (Neary et al., 1998)[1]

Criteria: The clinical criteria are set out in lists 1 through 4. The criteria for each of the three major clinical syndromes are divided into sections. The clinical profile statement together with the core clinical inclusion and exclusion features provide the necessary foundation for diagnosis. Additional clinical features, neuropsychological investigation, and brain imaging support the clinical diagnosis. Operational definitions of specific features are outlined later.

Clinical profile: This statement (seen in lists 1 through 3) summarizes the neurobehavioral profile necessary to fulfill criteria for diagnosis.

I. Core diagnostic features: These are features (see lists 1 through 3) integral to the clinical syndrome. All features must be present to fulfill the criteria for diagnosis.

II. Supportive diagnostic features:

Clinical: These are features (see lists 1 through 3) that are not present in all patients, or they may be noted only during one phase of the disease. They are therefore not necessary conditions for diagnosis. Supportive features are characteristic, often with high diagnostic specificity, and their presence adds substantial weight to the clinical diagnosis. The diagnosis becomes more likely when more supportive features are present.

Physical: In each of the clinical syndromes physical signs are few, in contrast to the prominent mental changes. Parkinsonian signs typically emerge only during late disease. The physical features outlined should be regarded as "supportive" rather than as necessary conditions for diagnosis.

Investigations: Formal neuropsychological assessment, EEG, and brain imagine each can provide support for and strengthen the clinical diagnosis. Such investigatory techniques are not available universally, and ought not to be considered a prerequisite for diagnosis. When neuropsychological assessment is performed, the profile of deficits must demonstrate disproportionate executive dysfunction in FTD or disproportionate language/semantic breakdown in PA and SD. With regard to brain imaging, the patterns of abnormality are characteristic, but not seen invariably. For example, prominent atrophy of the temporal lobes is well visualized by high-resolution MRI, but may be undetected by CT. Failure to demonstrate the prototypic appearances on imaging need not result in diagnostic exclusion.

III. Supportive features common to each of the clinical syndromes: These features (see list 4) support but are not a necessary condition for FTLD.

IV. Exclusion features common to each clinical syndrome:

Clinical: All features (see list 4) must be absent. Early severe amnesia, early spatial disorientation, logoclonic speech with loss of train of thought, and myoclonus are features designed to exclude AD.

Investigations: All features should be absent (when the relevant information is available).

V. Relative diagnostic exclusion features: These are features (see list 4) that caution against but do not firmly exclude a diagnosis of FTLD. A history of alcohol abuse raises the possibility of an alcohol-related basis for a frontal lobe syndrome. However, excessive alcohol intake may also occur in FTD patients as a secondary manifestation of social disinhibition or hyperoral tendencies. The presence of vascular risk factors such as hypertension ought to alert investigators to a possible vascular etiology. Nevertheless, such risk factors are common in the general population and may be present coincidentally in some patients.

[1] Neary D, Snowden JS, Gustafson L et al. Frontotemporal lobar degeneration: a consensus on clinical diagnostic criteria. *Neurology* 51:1546-54(1998).

Mark only one condition as primary.	Present	Absent		If Present: Primary	If Present: Contributing
11. Frontotemporal dementia (behavioral/executive dementia)	☐ 1	☐ 0	11a.	☐ 1	☐ 2

LIST 1. The Clinical Diagnostic Features of FTD

Clinical Profile: Character change and disordered social conduct are the dominant features initially and throughout the disease course. Instrumental functions of perception, spatial skills, praxis, and memory are intact or relatively well preserved.

I. Core diagnostic features

A. Insidious onset and gradual progression

B. Early decline in social interpersonal conduct

C. Early impairment in regulation of personal conduct

D. Early emotional blunting

E. Early loss of insight

II. Supportive diagnostic features

A. Behavioral disorder

1. Decline in personal hygiene and grooming.
2. Mental rigidity and inflexibility.
3. Distractibility and impersistence.
4. Hyperorality and dietary changes.
5. Perseverative and stereotyped behavior.
6. Utilization behavior.

B. Speech and language

1 Altered speech output:

a. Aspontaneity and economy of speech

b. Press of speech

2. Stereotypy of speech.

3 Echolalia.

4. Perseveration.

5. Mutism.

C. Physical signs

1. Primitive reflexes.
2. Incontinence.
3. Akinesia, rigidity, and tremor.
4. Low and labile blood pressure.

D. Investigations

1. Neuropsychology: significant impairment on frontal lobe tests in the absence of severe amnesia, aphasia, or perceptuospatial disorder.
2. Electroencephalography: normal on conventional EEG despite clinically evident dementia.
3. Brain imaging (structural and/or functional): predominant frontal and/or anterior temporal abnormality.

(*Review List 4 on page 60 for diagnostic exclusion criteria.*)

Use the following criteria to guide your answer to item 12:

Criteria for Primary Progressive Aphasia (PPA)[1,2]

Descriptive clinical profile: An aphasic dementia where the language impairment (aphasia) emerges in relative isolation and is the major determinant in the limitation of daily living activities. Perception, memory, personality are relatively preserved initially.

I. Core diagnostic features: These features are integral to the clinical syndrome.

A. Insidious onset and gradual progression.

B. Early onset of aphasic disturbance (including any combination of the following)

1. Word-finding pauses.
2. Word comprehension deficits.
3. Syntactic comprehension deficits.
4. Naming impairments.
5. Circumlocutious speech lacking nouns and verbs.
6. Agrammatic speech (abnormal syntax).
7. Pure word deafness.
8. Dysgraphia.

II. Supportive diagnostic features: These features are not present in all patients, but their presence serves further to support the diagnosis.

A. Clinical

1. Onset before the age of 65.
2. Dysarthria.
3. Ideomotor apraxia of the limbs.
4. Ideomotor apraxia of buccofacial musculature.
5. Dyscalculia.
6. Mild facial flattening on the side opposite the language dominant hemisphere (usually right face).
7. Asymmetrical upper extremity posturing upon stressed gait on the side opposite the language-dominant hemisphere (usually right arm).
8. Mild rigidity on the side opposite the language-dominant hemisphere (usually right side of body).

B. Investigations

1. Neuropsychology: Findings of aphasia and/or anomia in the absence of amnesia, prosopagnosia, associative visual agnosia, apathy, disinhibition. Scores on verbally mediated tests of memory and fluency may be abnormal because of the aphasia.
2. MRI or CT: Perisylvian atrophy that can extend to parietal cortex and/or inferior temporal cortex on the side of language dominance (usually left).
3. PET or SPECT: Asymmetrical hypometabolism in language-dominant hemisphere (usually left).
4. EEG: Asymmetrical slowing in the temporal leads of the language-dominant hemisphere (usually left).

(continued on next page)

[1] Mesulam M-M. Primary Progressive Aphasia. *Ann. Neurol.* 2001;49:425-432.

[2] Mesulam M-M. Primary progressive aphasia: A language-based dementia. *New Eng J Med.* 2003;348:1535-1542.

III. Exclusionary features

A. Historical or clinical

1. Abrupt onset.
2. Early amnesia.
3. Early prosopagnosia, visual agnosia.
4. Early spatial disorientation.
5. Early apathy or disinhibition.
6. Early motor neuron disease (if present, assign to relevant primary diagnosis).
7. Early major extrapyramidal signs/CBGD (if present, assign to relevant primary diagnosis).
8. Cerebellar signs.
9. Early eye movement abnormalities.
10. Head trauma related to onset.

B. Investigations

1. Brain imaging consistent with major stroke in the language dominant hemisphere (usually left).
2. Brain imaging showing asymmetrical moderate to severe lacunar stroke in the language-dominant hemisphere (usually left).
3. Brain imaging showing neoplasm or other space occupying lesion in the language-dominant hemisphere (usually left).
4. Brain imaging showing major trauma to language-dominant hemisphere (usually left).

Mark only one condition as primary.	Present	Absent	If Present: Primary	If Present: Contributing
12. Primary progressive aphasia (aphasic dementia)	☐ 1	☐ 0	12a. ☐ 1	☐ 2
(*If PPA is present, specify type by checking one box below "present" and all others "absent"*):				
1) Progressive nonfluent aphasia	☐ 1	☐ 0		

LIST 2. The clinical diagnostic features of progressive nonfluent aphasia

Clinical profile: Disorder of expressive language is the dominant feature initially and throughout the disease course. Other aspects of cognition are intact or relatively well preserved.

I. Core diagnostic features

A. Insidious onset and gradual progression

B. Nonfluent spontaneous speech with at least one of the following: agrammatism, phonemic paraphasias, anomia

II. Supportive diagnostic features

A. Speech and language
   1. Stuttering or oral apraxia.
   2. Impaired repetition.
   3. Alexia, agraphia.
   4. Early preservation of word meaning.
   5. Late mutism.

B. Behavior
   1. Early preservation of social skills.
   2. Late behavioral changes similar to FTD.

C. Physical signs: late contralateral primitive reflexes, akinesia, rigidity, and tremor

D. Investigations
   1. Neuropsychology: nonfluent aphasia in the absence of severe amnesia or perceptuospatial disorder.
   2. Electroencephalography: normal or minor asymmetric slowing.
   3. Brain imaging (structural and/or functional): asymmetric abnormality predominantly affecting dominant (usually left) hemisphere.

(*Review List 4 on page 60 for diagnostic exclusion criteria.*)

2) Semantic dementia – anomia plus word comprehension	☐ 1	☐ 0	
3) Semantic dementia – agnostic variant	☐ 1	☐ 0	

LIST 3. The clinical diagnostic features of semantic aphasia and associative agnosia (SD)

Clinical profile: Semantic disorder (impaired understanding of word meaning and/or object identity) is the dominant feature initially and throughout the disease course. Other aspects of cognition, including autobiographic memory, are intact or relatively well preserved.

I. Core diagnostic features

A. Insidious onset and gradual progression
B. Language disorder characterized by:
   1. Progressive, fluent, empty spontaneous speech;
   2. Loss of word meaning, manifest by impaired naming *and* comprehension;
   3. Semantic paraphasias; *and/or*
C. Perceptual disorder characterized by:
   1. Prosopagnosia: impaired recognition of identity of familiar faces; *and/or*
   2. Associative agnosia: impaired recognition of object identity.
D. Preserved perceptual matching and drawing reproduction
E. Preserved single-word repetition
F. Preserved ability to read aloud and write to dictation orthographically regular words

II. Supportive diagnostic features

A. Speech and language
   1. Press of speech.
   2. Idiosyncratic word usage.
   3. Absence of phonemic paraphasias.
   4. Surface dyslexia and dysgraphia.
   5. Preserved calculation.
B. Behavior
   1. Loss of sympathy and empathy.
   2. Narrowed preoccupations.
   3. Parsimony.
C. Physical signs
   1. Absent or late primitive reflexes.
   2. Akinesia, rigidity, and tremor.
D. Investigations
E. Neuropsychology
   1. Profound semantic loss, manifest in failure of word comprehension and naming and/or face and object recognition.
   2. Preserved phonology and syntax, and elementary perceptual processing, spatial skills, and day-to-day memorizing.
F. Electroencephalography: normal
G. Brain imaging (structural and/or functional): predominant anterior temporal abnormality (symmetric or asymmetric)

(*Review List 4 on page 60 for diagnostic exclusion criteria.*)

4) Other (e.g., logopenic, anomic, transcortical, word deafness, syntactic comprehension, motor speech disorder) ☐ 1 ☐ 0		

LIST 4. Features common to clinical syndromes of FTLD (extension of Lists 1 through 3)

III. Supportive features

A. Onset before 65 years: positive family history of similar disorder in first-degree relative

B. Bulbar palsy, muscular weakness and wasting, fasciculations (associated motor neuron disease present in a minority of patients)

IV. Diagnostic exclusion features

A. Historical and clinical

1. Abrupt onset with ictal events.
2. Head trauma related to onset.
3. Early, severe amnesia.
4. Spatial disorientation.
5. Logoclonic, festinant speech with loss of train of thought.
6. Myoclonus.
7. Corticospinal weakness.
8. Cerebellar ataxia.
9. Choreoathetosis.

B. Investigations

1. Brain imaging: predominant postcentral structural or functional deficit; multifocal lesions on CT or MRI.
2. Laboratory tests indicating brain involvement of metabolic or inflammatory disorder such as MS, syphilis, AIDS, and herpes simplex encephalitis.

V. Relative diagnostic exclusion features

A. Typical history of chronic alcoholism

B. Sustained hypertension

C. History of vascular disease (e.g., angina, claudication)

Mark only one condition as primary.	Present	Absent		If Present: Primary	Contributing	Non-contrib.
13. Progressive supranuclear palsy	☐ 1	☐ 0	13a.	☐ 1	☐ 2	☐ 3

Use the following criteria, excerpted from *SIC Task Force Appraisal of Clinical Diagnostic Criteria for Parkinsonian Disorders* (Litvan et al., 2003):

NINDS-SPSP clinical criteria for the diagnosis of PSP

Diagnostic categories	Inclusion criteria	Exclusion criteria	Supportive criteria
	For possible and probable: Gradually progressive disorder with age at onset at 40 or later;	*For possible and probable:* Recent history of encephalitis; alien limb syndrome; cortical sensory deficits; focal frontal or temporoparietal atrophy; hallucinations or delusions unrelated to dopaminergic therapy; cortical dementia of Alzheimer type; prominent, early cerebellar symptoms or unexplained dysautonomia; or evidence of other diseases that could explain the clinical features.	Symmetric akinesia or rigidity, proximal more than distal; abnormal neck posture, especially retrocollis; poor or absent response of parkinsonism to levodopa; early dysphagia & dysarthria; early onset of cognitive impairment including > 2 of: apathy, impairment in abstract thought, decreased verbal fluency, utilization or imitation behavior, or frontal release signs.
Possible	Either vertical supranuclear palsy or both slowing of vertical saccades & postural instability with falls < 1 yr disease onset.		
Probable	Vertical supranuclear palsy and prominent postural instability with falls within first year of disease onset.[a]		
Definite	All criteria for possible or probable PSP are met and histopathologic confirmation at autopsy.		

Adapted from Litvan et al., 1996[1]

[a] Later defined as falls or the tendency to fall (patients are able to stabilize themselves).

NINDS-SPSP = National Institute of Neurological Disorders and Stroke, and Society for Progressive Supranuclear Pals, Inc.

PSP = progressive supranuclear palsy.

[1] Litvan I, Agid Y, Calne D, et al. Clinical research criteria for the diagnosis of progressive supranuclear palsy (Steele-Richardson-Olszewski syndrome): report on the NINDS-SPSP international workshop. Neurology 1996;47:1-9.

Mark only **one** condition as primary.		Present	Absent		If Present: Primary	Contributing	Non-contrib.
14.	Corticobasal degeneration	☐ 1	☐ 0	14a.	☐ 1	☐ 2	☐ 3

Use the following criteria, excerpted from *SIC Task Force Appraisal of Clinical Diagnostic Criteria for Parkinsonian Disorders* (Litvan et al., 2003)[1]:

Proposed research criteria for CBD

Diagnostic categories	Inclusion criteria	Exclusion criteria
Lang et al[2]	Rigidity plus one cortical sign (apraxia, cortical sensory loss, or alien limb) *Or* Asymmetric rigidity, dystonia and focal reflex myoclonus.	Early dementia; early vertical gaze palsy; rest tremor; severe autonomic disturbances; sustained responsiveness to levodopa; lesions on imaging studies indicating another pathologic condition.
Kumar et al[3]	Chronic progressive course; asymmetric onset; presence of: "higher" cortical dysfunction (apraxia, cortical sensory loss, or alien limb); *And* Movement disorders – akinetic rigid syndrome-levodopa resistant, and limb dystonia and reflex; focal myoclonus.	

CBD = corticobasal degeneration.

Qualification of clinical features: rigidity, easily detectable without reinforcement; apraxia, more than simple use of limb as an object, clear absence of cognitive or motor devicit; cortical sensory loss, asymmetric, with preserved primary sensation; alien limb phenomen, more than simple levitation; dystonia, focal in limb, present at rest at onset; myoclonus, reflex myoclonus spreading beyond stimulated digits.

15.	Huntington's disease	☐ 1	☐ 0	15a.	☐ 1	☐ 2	☐ 3
	Refer to the DSM-IV manual.						

16.	Prion disease	☐ 1	☐ 0	16a.	☐ 1	☐ 2	☐ 3
	Refer to the DSM-IV manual.						

17.	Cognitive dysfunction from medications	☐ 1	☐ 0	17a.	☐ 1	☐ 2	☐ 3
	Refer to the DSM-IV manual.						

18.	Cognitive dysfunction from medical illnesses	☐ 1	☐ 0	18a.	☐ 1	☐ 2	☐ 3
	Refer to the DSM-IV manual.						

[1] Litvan I, Bhatia KP, Burn DJ, et al. Movement Disorders Society Scientific Issues Committee report: SIC Task force appraisal of clinical diagnostic criteria for Parkinsonian disorders. Mov Disord. 2003 May; 18(5):467-86.

[2] Lang AE, Riley DE, Bergeron C. Cortico-basal ganglionic degeneration. In: Calne DB, editor. Neurodegenerative diseases. Philadelphia: WB Saunders; 1994. p 877-894.

[3] Kumar R, Bergeron C, Pollanen MS, Lang AE. Cortical basal ganglionic degeneration. In: Jankovic J, Tolosa E, editors. Parkinson's disease and movement disorders. Baltimore: Williams and Wilkins; 1998. p 297-316.

Mark only one condition as primary.		Present	Absent		If Present: Primary	Contributing	Non-contrib.
19.	Depression	☐ 1	☐ 0	19a.	☐ 1	☐ 2	☐ 3

DSM-IV[1] criteria as summarized in The Multiplex Family Study Procedures Manual (created by Columbia University for the Alzheimer's Disease Genetics Initiative):

1. At least one of the following three abnormal moods that significantly interfered with the person's life:
   a. Abnormal depressed mood most of the day, nearly every day, for at least 2 weeks.
   b. Abnormal loss of all interest and pleasure most of the day, nearly every day, for at least 2 weeks.
   c. If 18 or younger, abnormal irritable mood most of the day, nearly every day, for at least 2 weeks.
2. At least five of the following symptoms have been present during the same 2-week depressed period:
   a. Abnormal depressed mood (or irritable mood if a child or adolescent), as defined in 1a.
   b. Abnormal loss of all interest and pleasure, as defined in 1b.
   c. Appetite or weight disturbance, either:
      1) Abnormal weight loss (when not dieting) or decrease in appetite; or
      2) Abnormal weight gain or increase in appetite.
   d. Sleep disturbance, either abnormal insomnia or abnormal hypersomnia.
   e. Activity disturbance, either abnormal agitation or abnormal slowing (observable by others).
   f. Abnormal fatigue or loss of energy.
   g. Abnormal self-reproach or inappropriate guilt.
   h. Abnormal poor concentration or indecisiveness.
   i. Abnormal morbid thoughts of death (not just fear of dying) or suicide.
3. The symptoms are not due to a mood-congruent psychosis.
4. There has never been a Manic Episode, a Mixed Episode, or a Hypomanic Episode.
5. The symptoms are not due to physical illness, alcohol, medication, or street drugs.
6. The symptoms are not due to normal bereavement.

[1] Diagnostic and statistical manual of mental disorders (DSM-IVE). 4th ed. 1994, Washington, DC: American Psychiatric Assoc.

Mark only one condition as primary.		Present	Absent		If Present: Primary	Contributing	Non-contrib.
20.	Other major psychiatric illness	☐ 1	☐ 0	20a.	☐ 1	☐ 2	☐ 3
	Refer to the DSM-IV manual.						
21.	Down's syndrome	☐ 1	☐ 0	21a.	☐ 1	☐ 2	☐ 3
	Refer to the DSM-IV manual.						
22.	Parkinson's disease	☐ 1	☐ 0	22a.	☐ 1	☐ 2	☐ 3

Use the following criteria, excerpted from *SIC Task Force Appraisal of Clinical Diagnostic Criteria for Parkinsonian Disorders* (Litvan et al., 2003). [These are the suggested criteria included in the most recent AAN Practice Parameter; the UDS Appendix will include the Practice Parameter as soon as it is published]:

UK Parkinson's Disease Society Brain Bank clinical diagnostic criteria

Inclusion criteria	Exclusion criteria	Supportive criteria
Bradykinesia (slowness of initiation of voluntary movement with progressive reduction in speed and amplitude of repetitive actions); And at least one of the following: Muscular rigidity. 4–6 Hz rest tremor. Postural instability not caused by primary visual, vertibular, cerebellar, or proprioceptive dysfunction.	History of repeated strokes with stepwise progression of parkinsonian features. History of repeated head injury. History of definite encephalitis. Oculogyric crises. Neuroleptic treatment at onset of symptoms. More than one affected relative. Sustained remission. Strictly unilateral features after 3 yr. Supranuclear gaze palsy. Cerebellar signs. Early severe autonomic involvement. Early severe dementia with disturbances of memory, language, and praxis. Babinski sign. Presence of cerebral tumour or communicating hydrocephalus on CT scan. Negative response to large doses of levodopa (if malabsorption excluded). MPTP exposure.	(Three or more required for diagnosis of definite PD): Unilateral onset. Rest tremor present. Progressive disorder. Persistent asymmetry affecting side of onset most. Excellent response (70–100%) to levodopa. Severe levodopa-induced chorea. Levodopa response for 5 yr or more. Clinical course of 10 yr or more.

UK = United Kingdom; PD = Parkinson's disease; CT = computed tomography.

The following information, published as Tables 10 and 11 in the *SIC Task Force Appraisal of Clinical Diagnostic Criteria for Parkinsonian Disorders* (Litvan et al., 2003)[1], may be useful for differential diagnosis of non-Alzheimer's dementia.

Table 1. Consensus Criteria for the Diagnosis of MSA

Clinical domain	Features	Criteria
Autonomic and urinary dysfunction	Orthostatic hypotension (by 20 mm Hg systolic or 10 mm Hg diastolic); urinary incontinence or incomplete bladder emptying.[a]	Orthostatic fall in blood pressure (by 30 mm Hg systolic or 15 mm Hg diastolic) and/or urinary incontinence (persistent, involuntary partial or total bladder emptying, accompanied by erectile dysfunction in men).[a]
Parkinsonism	B, R, I, and T.	1 of 3 (R, I, and T) and B.
Cerebellar dysfunction	Gait ataxia; ataxic dysarthria; limb ataxia; sustained gaze-evoked nystagmus.	Gait ataxia plus at least one other feature.
Corticospinal tract dysfunction	Extensor plantar responses with hyperreflexia.	No corticospinal tract features are used in defining the diagnosis of MSA.[b]

MSA = multiple system atrophy; B = bradykinesia; R = rigidity; I = postural instability; T = tremor.

[a] Note the different figures for orthostatic hypotension, depending on whether it us used as a feature or a criterion.

[b] In retrospect, this criterion is ambiguously worded. One possible interpretation is that, while corticospinal tract dysfunction can be used as a *feature* (characteristic of the disease), it cannot be used as a *criterion* (defining feature or composite of features required for diagnosis) in defining the diagnosis of MSA. The other interpretation is that corticospinal tract dysfunction cannot be used at all in consensus diagnostic criteria, in which case there is no point mentioning it.

Table 2. Consensus Diagnostic Categories and Exclusion Criteria for MSA

Diagnostic categories	Inclusion criteria	Exclusion criteria
Possible	One criterion plus two features from separate other domains. When the criterion is parkinsonism, a poor levodopa response qualifies as one feature (hence, only one additional feature is required).	*For possible and probable:* Symptomatic onset <30 yrs of age; Family history of a similar disorder; Systemic diseases or other identifiable causes for features listed in Table 1; Hallucinations unrelated to medication; DSM criteria for dementia; Prominent slowing of vertical saccades or vertical supranuclear gaze palsy; Evidence of focal cortical dysfunction such as aphasia, alien limb syndrome, and parietal dysfunction; Metabolic, molecular genetic, and imaging evidence of an alternative cause of features listed in Table 1.
Probable	One criterion for autonomic failure/urinary dysfunction plus poorly levodopa responsive parkinsonism or cerebellar dysfunction.	
Definite	Pathologically confirmed by the presence of a high density of glial cytoplasmic inclusions in association with a combination of degenerative changes in the nigrostriatal and olivopontocerebellar pathways.	

MSA = multiple system atrophy; DSM = Diagnostic and Statistical Manual for Mental Disorders.

[1] Litvan I, Bhatia KP, Burn DJ, et al. Movement Disorders Society Scientific Issues Committee report: SIC Task force appraisal of clinical diagnostic criteria for Parkinsonian disorders. Mov Disord. 2003 May; 18(5):467-86.

Mark only one condition as primary.		Present	Absent		If Present: Primary	Contributing	Non-contrib.
23.	Stroke	☐ 1	☐ 0	23a.	☐ 1	☐ 2	☐ 3

Use the following criteria[1]:

Rapidly developing clinical symptoms and/or signs of focal and at times global loss of cerebral function (applied to patients in deep coma and to those with subarachnoid hemorrhage) with symptoms lasting more than 24 hours or leading to death (therefore excluding transient ischemic attacks), and with no apparent cause other than vascular.

Patients are classified as having an ischemic stroke if they had computed tomographic or magnetic resonance imaging of the brain done within 7 days of onset of symptoms that either identified the symptomatic cerebral infarct or failed to identify an alternative cause of the symptoms.

24.	Hydrocephalus	☐ 1	☐ 0	24a.	☐ 1	☐ 2	☐ 3

Self-explanatory??

25.	Traumatic brain injury	☐ 1	☐ 0	25a.	☐ 1	☐ 2	☐ 3

Self-explanatory??

26.	CNS neoplasm	☐ 1	☐ 0	26a.	☐ 1	☐ 2	☐ 3

Self-explanatory??

27.	Other (*specify*): _____	☐ 1	☐ 0	27a.	☐ 1	☐ 2	☐ 3

If there is an observed cognitive impairment that is not due to any of the above-listed conditions, mark this category as "present", enter the type of condition, and indicate whether it is primary, contributing, or non-contributing.

[1] Cerebrovascular disease in the community: Results of a WHO Collaborative Study. (S Aho et al., 1980, Bull World Health Org., 58:113-130).

Form E1: IMAGING/LABS

The purpose of this form is to record any imaging or tests performed during the subject's current visit or previous visits, from which images or samples are available. The form should be completed by ADC or clinic staff.

Self-explanatory. If specimens and/or data are not accessible to your Center researchers within a few hours, then check "no".

Imaging (of the subject's head) available at your ADC:		**Film**			**Digital image**		
		Yes	**No**			**Yes**	**No**
1. Computed tomography	a.	☐ 1	☐ 0	b.	☐ 1	☐ 0
2. Magnetic resonance imaging – Clinical study	a.	☐ 1	☐ 0	b.	☐ 1	☐ 0
3. Magnetic resonance imaging – Research study/structural	a.	☐ 1	☐ 0	b.	☐ 1	☐ 0
4. Magnetic resonance imaging – Research study/functional	a.	☐ 1	☐ 0	b.	☐ 1	☐ 0
5. Magnetic resonance spectroscopy	a.	☐ 1	☐ 0	b.	☐ 1	☐ 0
6. SPECT	a.	☐ 1	☐ 0	b.	☐ 1	☐ 0
7. PET	a.	☐ 1	☐ 0	b.	☐ 1	☐ 0

Specimens available at your ADC:	**Yes**	**No**
8. DNA	☐ 1	☐ 0
9. Cerebrospinal fluid – ante-mortem	☐ 1	☐ 0
10. Serum/plasma	☐ 1	☐ 0

Genotyping results:	**Yes**	**No**
11. APOE genotype collected	☐ 1	☐ 0