ADNI Alzheimer's Disease Neuroimaging Initiative

ADNI2 VISCODE2 Assignment

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Summary

Unlike ADNI1 and ADNIGO, the ADNI2 database assigns participant visit data a generic visit code (VISCODE) that does not clearly indicate the longitudinal progression of the participant. For example, participants' data for month 12, 24, 36, 60, 72, 80 or 96 visits may all be marked with VISCODE=v08, depending on the enrollment date. To help determine ADNI2 visits longitudinal time point, the Alzheimer's Disease Cooperative Study (ADCS) at University of California, San Diego developed a linking table to identify a familiar ADNI visit code (sc, scmri, bl, m03, m06, m12, m18, m24, etc) that includes RID, VISCODE and VISCODE2 for all ADNI2 participants. VISCODE2 can be merged with ADNI2 clinical data files. This document details the process for assigning VISCODE2.

Method

ADNI2 VISCODE translations occur on a daily basis. An R script programmatically determines the interval between the baseline and initial ADNI2 visits and identified the closest annual time point (and corresponding month-based VISCODE, such as m36). The R script also identifies possible errors and flags those translations for manual review by an ADNI team administrator. The ADNI team administrator's documented decisions override the programmatic determination of VISCODE2.

Retrieve Data

ADNI clinical data is entered into an Electronic Data Capture system powered by the ADCS before being uploaded to UCLA's LONI. Each ADNI project (ADNI1, ADNIGO and ADNI2) has its own EDC data portal. To determine ADNI2 VISCODE2, the following data tables must be retrieved:

- ADNI1 Registry
- ADNIGO Registry
- ADNI2 Registry
- ADNI2 Roster

In addition, the administrative decision file must be accessed.

Identify Initial ADNI2 Visit Date (Continuing Participants Only)

A Registry form with an Examination Date (EXAMDATE) under the Initial ADNI2 Visit must be completed for participants continuing from ADNI1 or ADNIGO into ADNI2 in order to determine VISCODE2. The Initial ADNI2 Visit Date is the ADNI2 Registry EXADATE where VISCODE = 'v06'.

Exceptions may occur in which an ADNI2 Initial Visit Examination Date is not available for a participant who will continue in the protocol. An ADNI team administrator will review these cases and assign the appropriate VISCODE2 (see sections below regarding identification and review of possible errors).

Identify Original Baseline Visit Date (Continuing Participants Only)

Participants continuing from ADNI1 or ADNIGO into ADNI2 completed their baseline visit under the protocol in which they originally enrolled. The ADNI participant identifier (RID) indicates which protocol the participant enrolled under:

- RID<2000 enrolled under ADNI1;
- RID>=2000 and RID<4000 enrolled under ADNIGO; and
- RID>=4000 enrolled under ADNI2.

The original baseline date is Registry EXAMDATE where VISCODE='bl' from the ADNI1 or ADNIGO Registry, depending on which protocol the participant enrolled under (see Table 1).

Table 1. Baseline Visit Date Data Source

RID	**Protocol Enrolled Under**	**Baseline Date: Data Source**	**Baseline Date: Definition**	**Comments**
<2000	ADNI1	ADNI1 Registry	EXAMDATE where VISCODE= 'bl'	
>=2000 & <4000	ADNIGO	ADNIGO Registry	EXAMDATE where VISCODE= 'bl'	
>=4000	ADNI2	ADNI2 Registry	EXAMDATE where VISCODE= 'v03'	Not needed to determine VISCODE2

Calculate Time Elapsed Between Baseline and Initial ADNI2 Visits (Continuing Participants Only)

Calculate the number of days between the Baseline and Initial ADNI2 Visits. Divide the number of days by 365.25 and round to the nearest whole number to get the elapsed time in years. Multiple this by twelve to convert the rounded years value to months.

Assign VISCODE2

For continuing participants, VISCODE2 for the ADNI2 Initial Visit is:

- "m" + calculated time elapsed between Baseline and Initial ADNI2 Visits in months; or
- VISCODE2 from the administrative decisions file for flagged VISCODE2 assignments; the administrative decision trumps the programmatic calculation of the appropriate VISCODE2 (see sections below regarding identification and review of possible errors).

ADNI2 visits occur at six month intervals, so six is added for each subsequent visit (see Table 2 for an example).

Table 2. Sample Visit Code Translation for Continuing Participant Entering at Month 24

VISCODE	VISNAME	VISCODE2	VISNAME2	Comments
v06	ADNI2 Initial Visit	m24	Month 24	
v07	ADNI2 Initial TelCheck	m30	Month 30	
v11	ADNI2 Year 1 Visit	m36	Month 36	
v12	ADNI2 Year 1 TelCheck	m42	Month 42	
v21	ADNI2 Year 2 Visit	m48	Month 48	
v22	ADNI2 Year 2 TelCheck	m54	Month 54	
v31	ADNI2 Year 3 Visit	m60	Month 60	
v32	ADNI2 Year 3 TelCheck	m66	Month 66	
v41	ADNI2 Year 4 Visit	m72	Month 72	
v42	ADNI2 Year 4 TelCheck	m78	Month 78	
v51	ADNI2 Year 5 Visit	m84	Month 84	Currently not in use. May activate in case of protocol extension.
v52	ADNI2 Year 5 TelCheck	m90	Month 90	Currently not in use. May activate in case of protocol extension.

For all new participants enrolled under ADNI2, the relationship between VISCODE and VISCODE2 is static (see Table 3). VISCODE2 assignments are made as soon as the RID is created in the ADNI2 Roster table.

Table 3. Visit Code Translations for New Participants Enrolled Under ADNI2

VISCODE	VISNAME	VISCODE2	VISNAME2	Comments
v01	Screening	sc	Screening	
v02	Screening MRI	scmri	Screening MRI	
v03	Baseline	bl	Baseline	
v04	Month 3 MRI	m03	Month 3 MRI	
v05	Month 6	m06	Month 6	
v11	ADNI2 Year 1 Visit	m12	Month 12	
v12	ADNI2 Year 1 TelCheck	m18	Month 18	
v21	ADNI2 Year 2 Visit	m24	Month 24	
v22	ADNI2 Year 2 TelCheck	m30	Month 30	
v31	ADNI2 Year 3 Visit	m36	Month 36	
v32	ADNI2 Year 3 TelCheck	m42	Month 42	
v41	ADNI2 Year 4 Visit	m48	Month 48	
v42	ADNI2 Year 4 TelCheck	m54	Month 54	
v51	ADNI2 Year 5 Visit	m60	Month 60	Currently not in use. May activate in case of protocol extension.
v52	ADNI2 Year 5 TelCheck	m66	Month 66	Currently not in use. May activate in case of protocol extension.

Check for Possible Errors in Assignment of VISCODE2 (Continuing Participants Only)

Irregularities in study procedures (e.g., visit windows, missed visits) or data entry may result in the incorrect assignment of VISCODE2 for continuing participants. Data with these features are flagged for further review:

- Duplicate VISCODE across portals (VISCODE2 for v06 already exists as VISCODE in ADNI1 or ADNIGO Registry)
- Duplicate EXAMDATE across portals (v06 Examination Date recorded for different visit under ADNI1 or ADNIGO Registry)
- Rounded >= 25% to get whole number when converting days to years (Visit appears to be three or more months out of window)
- Data for previous visit (VISCODE2 – 6) does not exist in ADNI1 or ADNIGO Registry
- ADNI2 Initial Visit Registry does not have a valid Examination Date (Registry EXAMDATE where VISCODE= 'v06') (i.e., missing data code)

Review Flagged VISCODE2 Date (Continuing Participants Only)

An administrator on the ADNI team at the ADCS reviews the report listing the possible errors in the assignment of VISCODE2 for continuing participants. The administrator reviews the data across portals and contacts the site as necessary to determine the appropriate VISCODE2 assignment for each flagged VISCODE2 determination. The resulting decisions file is referenced in assigning VISCODE2. The administrative decision trumps the programmatic calculation of the appropriate VISCODE2.

Produce Linker File with VISCODE2

The R script produces a csv (comma-delimited) data file with RID, VISCODE, and VISCODE2 for all possible ADNI2 Visits (v01 – v52). The filename is adni2_visitid.csv. There is also an associated data dictionary file: adni2_visitid_dict.csv.

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