Documentation for all Data Sets

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HEALTH ABC DATA ANALYSIS FILE

Documentation

The dataset documentation has been split into 5 separate documents to help the user more easily find the information they are looking for. Specifically, the following pieces of documentation have separate links on the Health ABC website under the Dataset Documentation/Year 11 Data Code Book link:

Overview: this current document describes the documentation, as well as the SAS datasets and listings available for download from the Health ABC website. In addition, it describes the dataset PH, which summarizes the participant's history during the course of Health ABC and, as such, is non-year-specific and is updated each time data are released.

Clinic Form Data: this documentation describes the datasets that contain the data collected using clinic visit forms (Y11Visit, Y11Proxy, SA126Mo, SA126Prox, and MissVisit).

Reading Center Data (non-form exam data): this documentation describes the data collected, and sometimes additionally processed by a reading center, outside the regular clinic visit forms (Y11Read). Measurements initially recorded in the forms that have subsequently been validated or revised by the reading centers, for example Peroneal Motor Nerve Conduction amplitude and velocity measures, have been removed from the form and are included only in the Y11Read dataset. **Note: the Reading Center Data will be released with the next update**.

Medication Data: Although the medication inventory is collected using the clinic forms, it is stored and analyzed in multiple records per participant (Y11MIF, Y11MIFCOD). For this reason these data and their documentation are kept separate. Calculated variables to summarize these back into a one-record-per-participant dataset (Y11RxCalc) are also documented here.

Calculated Variables: Other than the medication calculated variables, all variables derived via some algorithm or formula from the raw data as collected on clinic visit forms or otherwise (e.g., reading center data) are collected together in the Y11Calc dataset. These variables were, for the most part, created by Health ABC Investigators outside the Coordinating Center, in the process of analyzing the data for publication. In order to better standardize analysis and publication of Health ABC data, these variables are documented in calculated variable worksheets, which explain in words what was done, and the SAS code used to implement these algorithms is also included. All of this documentation can be found in the Calculated Variables documentation.

SAS DATASETS

The Year 11 data can be found in the nine datasets listed below, depending on the origin of the data. To use the data, please contact the PI at your site.

Y11Visit	Year 11 Clinic Visit, Home Visit, Return Visit and Annual Telephone Visit data
Y11Proxy	Year 11 Proxy Interview
SA126Mo	126-month (Year 11.5) Semi-Annual Telephone Contact Data
SA126Prox	126-month (Year 11.5) Proxy Interview data
Y11Read	Year 11 Reading Center data
Y11Calc	Year 11 calculated (derived) variables
Y11MIF	Year 11 Medication Inventory Forms data
Y11MIFCOD	Year 11 MIF data with 1 record per participant/ingredient pair
Y11RxCalc	Calculated medication use variables based on Year 11 MIF data

In addition, the following files, not specific to any year but updated each time data are released, can be found at the top of the Current Datasets listing on the Health ABC website under the Datasets & Documentation link:

PH	Participant History File
MissVis	Missed Follow-up Contact data
BMDNotes	Explanatory notes for BMD QC code variables
Formats	SAS Format Library

PARTICIPANT HISTORY FILE (PH)

1. General description

The PH file contains general information about the participants enrolled in the study. Variables included are:

HABCID	Health ABC Enrollment ID# without the 2-letter prefix
HCFAID	HCFA Screening ID (as assigned by the Coordinating Center)
DOB	Date of Birth
DOD	Date of Death
GENDER	Gender (1=Male; 2=Female)
RACE	Race (1=White; 2=Black)
RACEGEN	Race-gender group (1=White male, 2=White female, 3=Black male, 4=Black female)
SITE	Clinic Site (1=Memphis, 2=Pittsburgh)
CV1AGE	Age at Year 1 Clinic Visit
CV1DATE	Year 1 Clinic Visit Date
SV06AGE	Age at 6-Month Contact
SV06DATE	6-Month Contact Date
VITAL06M	Vital Status at time of 6-month contact
CV2AGE	Age at Year 2 Clinic Visit
CV2DATE	Year 2 Clinic Visit Date
VITAL12M	Vital Status at time of Year 2 (12-month) contact
SV18AGE	Age at 18-Month Contact
SV18DATE	18-Month Contact Date
VITAL18M	Vital Status at time of 18-month contact

CV3AGE	Age at Year 3 Clinic Visit
CV3DATE	Year 3 Clinic Visit Date
VITAL24M	Vital Status at time of Year 3 (24-month) contact
SV30AGE	Age at 30-Month Contact
SV30DATE	30-Month Contact Date
VITAL30M	Vital Status at time of 30-month contact
CV4AGE	Age at Year 4 Clinic Visit
CV4DATE	Year 4 Clinic Visit Date
VITAL36M	Vital Status at time of Year 4 (36-month) contact
SV42AGE	Age at 42-Month Contact
SV42DATE	42-Month Contact Date
VITAL42M	Vital Status at time of 42-month contact
CV5AGE	Age at Year 5 Clinic Visit
CV5DATE	Year 5 Clinic Visit Date
VITAL48M	Vital Status at time of Year 5 (48-month) contact
SV54AGE	Age at 54-Month Contact
SV54DATE	54-Month Contact Date
VITAL54M	Vital Status at time of 54-month contact
CV6AGE	Age at Year 6 Clinic Visit
CV6DATE	Year 6 Clinic Visit Date
VITAL60M	Vital Status at time of Year 6 (60-month) contact
SV66AGE	Age at 66-Month Contact
SV66DATE	66-Month Contact Date
VITAL66M	Vital Status at time of 66-month contact
CV7AGE	Age at Year 7 Clinic Visit
CV7DATE	Year 7 Clinic Visit Date
VITAL72M	Vital Status at time of Year 7 (72-month) contact
SV78AGE	Age at 78-Month Contact
SV78DATE	78-Month Contact Date
VITAL78M	Vital Status at time of 78-month contact
CV8AGE	Age at Year 8 Clinic Visit
CV8DATE	Year 8 Clinic Visit Date
VITAL84M	Vital Status at time of Year 8 (84-month) contact
SV90AGE	Age at 90-month Contact
SV90DATE	90-month Contact Date
VITAL90M	Vital Status at time of 90-month contact
CV9AGE	Age at Year 9 Clinic Visit
CV9DATE	Year 9 Clinic Visit Date
VITAL96M	Vital Status at time of Year 9 (96-month) contact
SV102AGE	Age at 102-month Contact
SV102DATE	102-month Contact Date
VITAL102M	Vital Status at time of 102-month contact
CV10AGE	Age at YEAR 10 Clinic Visit
CV10DATE	YEAR 10 Clinic Visit Date
VITAL108M	Vital Status at time of YEAR 10 (108-month) contact
SV114AGE	Age at 114-month Contact
SV114DATE	114-month Contact Date
VITAL114M	Vital Status at time of 114-month contact

CV11AGE	Age at YEAR 11 Clinic Visit
CV11DATE	YEAR 11 Clinic Visit Date
VITAL120M	Vital Status at time of YEAR 11 (120-month) contact
SV126AGE	Age at 126-month Contact
SV126DATE	126-month Contact Date
VITAL126M	Vital Status at time of 126-month contact
VERSIONPH	Participant History File Release Date
VStatus	Vital Status (1=Alive, 2=Dead) as of PH file release date

The birthdate, race, and gender data come from the edited HCFA data. The Year 1 clinic visit date was taken from the corrected final participant list provided by the each clinic (with later corrections as necessary). All other dates were taken from the corresponding Clinic Visit workbook, Home Visit workbook, Annual Telephone interview, Proxy Interview, Proxy Contact Home Visit Workbook or Semi-Annual Telephone Contact form; participants who missed a visit have no corresponding date (set to .A). Age at each contact is a calculated variable based on birthdate and that contact date.

There are 3075 observations in the PH file. The demographic breakdown of participants in this dataset is as follows:

African-American Female	729
African-American Male	552
White Female	855
White Male	939
Memphis Participants	1548
Pittsburgh Participants	1527

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the "Proc Contents for All Datasets" link (search under PH).

3. Dataset structure and contents

The PH file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
HCFAID	HCFA ID (as assigned by the Coordinating Center)

4. Condition of data

a. Known data errors: None at this time. The data have been edited. Editing will, however, be ongoing (iterative), so use of the most recent dataset is always advised.

b. Strengths and weaknesses of dataset items: If a death has been reported on a Missed Visit Form, an Event Form, or the Report of Death, the participant is listed as deceased in the vital status variable (VStatus) variable. Note: VStatus is vital status as of the release date of the participant history file, not as of any particular visit. This variable should only be used to determine the most up-to-date snapshot of vital status in Health ABC as of the file date. Vital status variables (VITALxxM) have been created for each Health ABC contact as follows: If a participant had a particular contact, or if they missed a contact but they were determined to still be alive at the time their contact was due (participant refused the contact, was too ill, etc), then VITALxxM is alive. If they missed a contact and were later discovered to have died before the end of their contact window, then VITALxxM is dead. If they missed a contact and were later discovered to have died after the end of their contact window, then VITALxxM is alive for that contact, but dead for the next. Finally, if they missed a contact without a determination of their vital status (participant could not be located, withdrew, no data for a visit for which they are past the visit window, etc) and no further contact with vital status determination has been made since then, then VITALxxM is missing.

The date of death (DOD) variable represents the best available information about the date of death for deceased participants as of the creation date of participant history file (PH).* If a Report of Death form has been entered for the participant, the date of death from that adjudication form is used. If there is no Report of Death form yet, this information is taken from the Event Form dataset, and is therefore an un-confirmed, un-adjudicated date of death.

c. Missing Value Conventions: See Special Missing Value Codes below for special missing value codes applied

5. Dataset index formulation and key variable mapping

The PH file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

LISTINGS

A PDF listing of the SAS proc contents printout for all SAS datasets can be found under the "Proc Contents for All Datasets" link.

A text file, Formats.lst, showing all formats and value descriptions (e.g.: 1=White, 2=Black) contained in the SAS Format Library can also be downloaded. Click on FormatsList under the List of Current Datasets on the Health ABC website.

* Run proc contents in SAS to see creation date of the PH file.

The following files are zipped together in a self-extracting document also available on the Health ABC website under the Current Datasets listing

Y11_Datadict.xls Microsoft Excel spreadsheet containing information about all variables included in the SAS datasets

Y11_Datadict.dat Tab-delimited text file containing the same information as above.

Y11_Legend.xls Microsoft Excel spreadsheet containing formatted MIF legend, showing all medication ingredients used by participants in Year 11, grouped by IDIS code hierarchy, and including frequencies for each ingredient.

Y11_Legend.dat Tab-delimited text file containing the same information as above.

DATA DICTIONARY (datadict.xls, datadict.txt)

General description

This is a searchable/sortable file that contains all the variables included in the SAS datasets. The following fields are included:

Variable	Variable Name
Label	Description of the variable
Form	Form or reading center origin of the variable
Page	Page number (not applicable for reading center or PH data)
Database	Database location of the variable
Variable Types	Type of variable (text, categorical (numeric), continuous (numeric), date, time, etc.)
Possible Values	Range of possible values associated with the variable (used for range edits)
SAS Format	SAS format assigned to the variable
Page Order	Variable order on the data collection forms (useful for sorting)

General Strategies for Use

The data dictionary is provided in two formats: Excel 2000 and tab-delimited text. They contain exactly the same information. The tab-delimited file was generated to provide easy access to those who do not have Excel version 2000 or higher.

The file is currently sorted by variable name. It can be used to search for details on a particular variable, to group by database or form, or to find a variable location on a form. It is a little more user friendly than the standard SAS proc contents, as it can be sorted, easily searched, and it provides additional details such as page number and form.

Year 11 Clinic Form Data

(Y11Visit, Y11Proxy, SA126Mo, SA126Prox, MissVis)

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YEAR 11 VISIT DATA (Y11Visit)

1. General description

The Y11Visit file contains information about the participants enrolled in the study gathered from the Year 11 Clinic Visit Workbook, the Year 11 Home Visit Workbook (proxy and non-proxy), the Year 11 Annual Telephone Interview, and the Proxy Interview Workbook (pages 42 to the end). Data from Section B of the Medication Inventory Form can be found in Y11MIF (see MIF documentation). If a participant did not have a Year 11 clinic visit, a Year 11 home visit, a Year 11 Annual telephone interview, or a Year 11 proxy visit, they should have a Missed Follow-up Contact form that explains why. In addition, a variable VISITYPE has been included to allow the analyst to account for all participants, whether or not they had a Year 11 clinic visit.

There are 3,075 observations in the Y11Visit file. The types of visits (VISITYPE) are as follows:

Clinic Visit	(Visitype=0)	1,182
Home Visit	(Visitype=1)	139
Annual Phone Visit	(Visitype=13)	343
Clinic Visit w/Proxy	(Visitype=11)	16
Proxy Home Visit	(Visitype=6)	7
Proxy Interview Only	(Visitype=8)	185
Mixed Visit	(Visitype=10)	11
Missed/Deceased	(Visitype=4)	1,035
Missed/Withdrew	(Visitype=5)	44
Missed/Other	(Visitype=3)	113

The Y11Visit file contains both interview data and physical measurement data. The Y11Proxy file contains only interview information obtained through a proxy.

If VISITYPE = 0, 1, or 13, all the participant's Year 11 data can be found in Y11VISIT.

If VISITYPE = 8, all the participant's Year 11 data can be found in Y11PROXY.

If VISITYPE = 11, the participant had a clinic visit with a proxy interview, so the participant's Year 11 proxy interview data can be found inY11PROXY and physical measurement data in Y11VISIT.

If VISITYPE=6, the participant had a home visit with proxy interview, so the participant's Year 11 proxy interview data can be found inY11PROXY and physical measurement data in Y11VISIT.

If VISITYPE=3, 4 or 5, the participant did not have a Year 11 contact and their Missed Follow-up Contact data can be found in MISSVIS.

If VISITYPE=10, the participant has a non-standard mixed visit type (see strengths and weaknesses, below), but all of the participant's Year 11 data can be found in Y11VISIT.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the "Proc Contents for All Datasets" link (search under Y11Visit). Variable names can also be found on the annotated forms. Please note that not all variables on the forms are contained in the dataset. Those that are not released have been grayed out on the annotated forms. Some were strictly for bookkeeping purposes. Others are excluded for confidentiality reasons. Lab specimen and processing variables, which can repeat more than one time, will have a suffix (1 or 2) and are shown on the annotated forms with the second occurrence in a bracket [2].

3. Dataset structure and contents

The Y11Visit file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*
VISITYPE	(0=Clinic, 1=Home, 2=Phone, 3=Missed (other), 4=Deceased, 5=Withdrew, 6=Proxy Home, 8=Proxy Phone Interview Only; 10=Mixed Visit; 11=Clinic Visit with Proxy Interview; 13=Annual Phone Visit)
MISSREAS	Reason Y11 Visit Missed

4. Condition of data

a. Known data errors:

Year 11 Questionnaire: None at this time.

Year 11 Clinic Visit Workbook: None at this time.

b. Strength and weaknesses of dataset items: There were 11 patients who were seen in the home and thus had a home interview and then agreed to come in to clinic for the ankle arm blood pressure, vibration perception threshold, and peroneal motor nerve conduction. They have been flagged with VISITYPE=10 (mixed visit). They did not however have a height measurement taken.

Two variables, ST20TM1S and ST20TM2S, which convert the 20-meter walk times to seconds, have been added to the Y11Visit dataset. When both the time variable and the corresponding steps variable (ST20STP1 or ST20STP2, respectively) are 0, the participant tried, but was unable to complete the 20-m walk.

* Must link to Health ABC participant history file (PH) to add this variable.

Calculated (derived) variables have been created to complement those created for Years 1 through 10. To avoid confusion, these variables are listed in Y11Calc.

c. Missing Value Conventions: See Special Missing Value Codes below for special missing value codes applied.

5. Dataset index formulation and key variable mapping

The Y11Visit file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

YEAR 11 PROXY CONTACT DATA (Y11Proxy)

1. General description

As the Health ABC cohort has aged, some participants have begun having cognitive difficulties that prevent their being able to answer interview questions, and in some cases, being able to understand the instructions for some measurements. In response to this situation, two new forms were created near the end of Year 3, the Proxy Interview and the Proxy Contact Home Visit Workbook. There are 208 observations in the Y11Proxy file.

A participant may have one of three possible types of proxy contacts:

- a proxy interview visit (185 participants in Year 11 fall into this group), in which case they will have only Proxy Interview and possibly MIF data;
- a proxy home visit (7 participants) in which case they will have both a Proxy Interview and a Proxy Contact Home Visit Workbook plus MIF data; or
- a proxy clinic visit (16 participants), in which case they would have a Proxy Interview; a Year 11 Clinic Visit Workbook and MIF data.

Data for the last two groups will be found in two places: interview data will be found in Y11Proxy, while physical measurements will be found in Y11Visit. Note that a "proxy interview" contact is empirically defined as having interview data only (and possibly MIF data), but no physical measurements, regardless of where the participant or their proxy was at the time of the interview. This definition was used for the creation of the VISITYPE variable, but was not always followed by the clinics in assigning a value to YACONTAC. Thus VISITYPE is a more reliable variable to use to determine how many proxy contacts have only interview information, vs how many have physical measurements as well.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the "Proc Contents for All Datasets" link (search under Y11Proxy). Calculated variable names and descriptions are listed in the documentation for the Calculated Variables. Variable names can also be found on the annotated

forms. Please note that not all variables on the forms are contained in the dataset. Those that are not released have been grayed out on the annotated forms. Some were strictly for booking purposes. Others are excluded for confidentiality reasons.

3. Dataset structure and contents

The Y11Proxy file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*
VISITYPE	(6=Proxy Home, 8=Proxy Phone, 10=Mixed Visit, 11=Proxy with Clinic Visit Workbook)

4. Condition of data

a. Known data errors: None at this time.

b. Strength and weaknesses of dataset items: No calculated variables have been created yet for this dataset. The only standard calculated variables that might apply to these data are the self-reported function variables; however, it has been reported that proxies over-report functional limitation (Elam, et al. Am J Public Health. 1991; 81:1127), and therefore more consideration needs to be applied to how these variables should be calculated.

c. Missing Value Conventions: See Special Missing Value Codes below for special missing value codes applied

5. Dataset index formulation and key variable mapping

The Y11Proxy file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

126-MONTH (Year 11.5) SEMI-ANNUAL TELEPHONE CONTACT DATA (SA126Mo)

1. General description

The 126-month (Year 11.5) visit file contains information about the participants enrolled in the study gathered from the Year 11.5 Semi-Annual Telephone Interview. In some cases, a participant was unable to complete the contact by telephone because of deafness, cognitive impairment, or other reasons, and the information was gathered by proxy. Data for these participants can be found in SA126Prox. If a participant did not have a Year 11.5 semi-annual telephone interview or a Year

* Must link to Health ABC participant history file (PH) to add this variable.

11.5 proxy, they should have a Missed Follow-up Contact form that explains why. A variable, VISITYPE, has been added to this dataset to allow the analyst to account for all participants, whether or not they had a Year 11.5 follow-up telephone call. If VISITYPE=7, the participant's Year 11.5 data can be found in SA126Mo. If VISITYPE= 8, the participant's Year 11.5 data can be found in SA126PROX. If VISITYPE=3, 4 or 5, the participant did not have a Year 11.5 contact and their Missed Follow-up Contact data can be found in MISSVIS.

There are 3075 observations in the SA126Mo file. The types of visits (VISITYPE) are as follows:

SATC - Phone	(Visitype=7)	1,579
Proxy Phone Only	(Visitype=8)	201
Missed/Deceased	(Visitype=4)	1,085
Missed/Withdrew	(Visitype=5)	47
Missed/Other	(Visitype=3)	163

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the "Proc Contents for All Datasets" link (search under SA126Mo). Variable names can also be found on the annotated forms. Please note that not all variables on the forms are contained in the dataset. Those that are not released have been grayed out on the annotated forms. Some were strictly for booking purposes. Others are excluded for confidentiality reasons.

3. Dataset structure and contents

The SA126Mo file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*
VISITYPE	(3=Missed (other), 4=Deceased, 5=Withdrew, 7=SATC Phone, 8=Proxy Phone)
MISSREAS	Reason Year 11.5 Visit Missed

4. Condition of data

a. Known data errors: None at this time.

b. Strength and weaknesses of dataset items: Calculated (derived) variables have been added to the dataset (see Appendix I).

* Must link to Health ABC participant history file (PH) to add this variable.

c. Missing Value Conventions: See Special Missing Value Codes for special missing value codes applied.

5. Dataset index formulation and key variable mapping

The SA126Mo file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

126-MONTH (Year 11.5) PROXY CONTACT DATA (SA126Prox)

1. General description

In some cases, a participant was unable to complete the Year 11.5 contact by telephone because of deafness, cognitive impairment or other reasons. In response to this situation, the Proxy Interview was developed to allow another person to answer for them.

At the 126-month visit, there are 201 participants who have a Proxy Interview and can be found in SA126PROX.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the "Proc Contents for All Datasets" link (search under SA126PROX). Variable names can also be found on the annotated forms. Please note that not all variables on the forms are contained in the dataset. Those that are not released have been grayed out on the annotated forms. Some were strictly for booking purposes. Others are excluded for confidentiality reasons. Note also that the same workbook is used for annual and semi-annual proxy interviews. At the semi-annual contact, only questions marked with a star (☆) are asked. All others are omitted from the dataset because they are empty.

3. Dataset structure and contents

The SA126Prox file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*
VISITYPE	(3=Missed (other), 4=Deceased, 5=Withdrew, 7=SATC Phone, 8=Proxy Phone)

4. Condition of data

a. Known data errors: None at this time.

* Must link to Health ABC participant history file (PH) to add this variable.

b. Strength and weaknesses of dataset items: No calculated variables have been created yet for this dataset. The only standard calculated variables that might apply to these data are the self-reported function variables; however, it has been reported that proxies over-report functional limitation (Elam, et al. Am J Public Health. 1991; 81:1127), and therefore more consideration needs to be applied to how these variables should be calculated.

c. Missing Value Conventions: See Special Missing Value Codes for special missing value codes applied.

5. Dataset index formulation and key variable mapping

The SA126PROX file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

MISSED FOLLOW-UP CONTACT DATA (MISSVIS)

1. General description

The MISSVIS file contains information about the participants who have missed a follow-up contact (died, refused, lost to follow-up, etc) at any time during the study, up through the Year 11.5 (126-month) contact. If a participant missed an annual or semi-annual contact, they should have a Missed Follow-up Contact form that explains why.

The number of Missed Follow-up Contact forms related to each of these visits is shown below:

6-month follow-up contact	23
Year 2 visit	77
18-month semi-annual contact	137
Year 3 visit	95
30-month semi-annual contact	199
Year 4 visit	160
42-month semi-annual contact	201
Year 5 visit	125
54-month semi-annual contact	151
Year 6 visit	144
66-month semi-annual contact	144
Year 7 visit	136
78-month semi-annual contact	176
Year 8 visit	204
Year 8.5 (90-month) semi-annual contact	203
Year 9 visit	176
Year 9.5 (102-month) semi-annual contact	172
Year 10 visit	211
Year 10.5 (114-month) semi-annual contact	165

Year 11 visit	234
Year 11.5 (126-month) semi-annual contact	221

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the "Proc Contents for All Datasets" link (search under MISSVIS). Variable names can also be found on the annotated forms.

3. Dataset structure and contents

The MISSVIS file contains multiple observations per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*
BJID2	Contact missed (9=6-month, 2=Year 2, 10=18-month, 3=Year 3, 11=30-month, 4=Year 4, 12=42-month, 5=Year 5, 13=54-month, 6=Year 6, 14=66-month, 7=Year 7, 15=78-month, 16=Year 8, 17=90-month, 18=Year 9, 19=102-month, 20=Year 10, 21=114-month, 22=Year 11, 23=126-month)

4. Condition of data

a. Known data errors: None at this time..

b. Strength and weaknesses of dataset items: If a participant missed a visit due to death or withdrawal from the study, the Missed Follow-up Contact corresponding to the first contact missed for this reason is usually the last Missed Follow-up Contact for that participant. That is, field centers were instructed not to continue completing Missed Follow-up Contacts for each subsequent contact missed after the death of a participant or their withdrawal from the study. If a participant could not be located at one contact and therefore had a Missed Follow-up Contact completed for that contact, then subsequently was found to have died before that contact, the death was recorded on a Missed Follow-up Contact form for the subsequent contact. That is, the Missed Follow-up Contact information reflects the status of the participant as known to the field center at the time of the scheduled contact. Missed Follow-up Contact data should not be used to determine approximate date of death, nor even numbers of participants who had died as of a particular follow-up contact. The best information available at the time of the data analysis file regarding date of death can be found in the Participant History file (PH, DOD, see page 3). If a participant was found to have both a Missed Follow-up Contact form for a particular contact and the corresponding contact forms (e.g. Clinic Visit Workbook, Home Visit Workbook, Annual Telephone Interview, Proxy Interview, Proxy Contact Home Visit Workbook, or Semi-Annual Follow-Up Contact form), the Missed Follow-up Contact form data for that participant were deleted from the analysis file.

c. Missing Value Conventions: See Special Missing Value Codes below for special missing value codes applied

* Must link to Health ABC participant history file (PH) to add this variable.

5. Dataset index formulation and key variable mapping

The MISSVIS file is sorted by HABCID, which is a unique identifier for each participant. The combination of HABCID and BJID2 is a unique identifier for a participant/contact record in this dataset.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets. The MISSVIS file must first be subsetted by BJID2 to the contact desired before merging with a contact-specific, one-record-per-participant dataset.

SPECIAL MISSING VALUE CODES

SAS allows for stratification of missing values. The following missing values have been assigned:

. =‘Missing Form’
.A =‘A:Not Applicable’
.E =‘E:Recoded to Missing’
.F =‘F:Variable Missing from Form’
.L =‘L:Permanently Lost’
.M =‘M:Missing’
.N =‘N:Not Required’

Description

. : Missing Form
Used when a value is missing because the entire form has not been entered.

A: Not Applicable
Used when a value is missing but the value is not required (due to simple skip pattern logic)

E: Recoded to Missing
Used to flag that a value was entered originally but should not have been (due to a skip pattern logic error) and that the value has been recoded to missing

F: Variable Missing from Form
Used to flag a variable that was not originally on the form (form was revised during the visit year) and therefore there is no value for this participant

L: Permanently Lost
Used to flag a tracking variable when a measurement involving a Reading Center was done, but the data either never made it to the Reading Center, or was lost at the Reading Center.

M:Missing
Used to flag missing values when the value is required (i.e., true missing values).

N:Not Required
Used when a value is missing but the value is not required (not due to simple skip pattern logic). For example, for checkbox variables which are "Check all that apply," each one, individually, is not required. In these cases, a summary calculated variable (not included on the dataset) was used to edit missing responses. Some variables whose skip pattern logic is non-standard (i.e., the skip pattern involves several variables and forms) also have .N flags when missing, whether or not a response was required due to the skip pattern.

General Strategies for Using Special Missing Values

In SAS, when using special missing values in logical expressions, the missing value is no longer only equal to '.' To express a value equal to missing, the code should be written: <= .z or alternately: le .z

To express a value not equal to missing, the code should be written >.z or alternately: gt .z
.Z is the greatest value of missing available in SAS.

DROPPED VARIABLES

A number of variables appear on the annotated forms but will not be found in the datasets. These can be identified on the forms in that they have been grayed out. There are several reasons why variables were dropped:

1. Participant confidentiality: identifying information such as participant name, acrostic, address, telephone number, etc. are omitted from the analysis file. All participants are instead identified by the HABC Enrollment ID# (HABCID).

2. Bookkeeping variables: a number of variables were put on the forms merely for bookkeeping purposes and are extremely unlikely to be useful for analysis. If an investigator notices that such a variable has been dropped and believes it should not have been, s/he should feel free to contact the Coordinating Center (HABCHelp@psg.ucsf.edu) and let us know that it should be included in future datasets.

3. Redundant variables: in many cases the same information was collected numerous times. We have made a special effort to clean up one version of each of these; and to avoid analysis using uncleaned data, the uncleaned version is omitted.

Appendix I

126-month CALCULATED VARIABLES

Variable	Variable Description	Grouping
CSAINDEX	Climbing stairs ability index	Self-Reported Function Calculated Vars.
EASE1F	Ease climbing 1 flight	Self-Reported Function Calculated Vars.
EASE1M	Ease walking 1 mile	Self-Reported Function Calculated Vars.
EASE2F	Ease climbing 2 flights	Self-Reported Function Calculated Vars.
EASEQM	Ease walking 1/4 mile	Self-Reported Function Calculated Vars.
WKAINDEX	Walking ability index	Self-Reported Function Calculated Vars.

YEAR 11 MEDICATION INVENTORY FORM DATA

(Y11MIF, Y11MIFCOD, and Y11RxCalc)

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YEAR 11 MEDICATION INVENTORY FORM DATA

(Y11MIF and Y11MIFCOD)

1. General description

The Year 11 dataset contains the following SAS datasets related to medication use:

Y11MIF	Year 11 Medication Inventory forms data
Y11MIFCOD	Year 11 MIF data with 1 record per ingredient/participant pair
Y11RxCalc	Calculated medication use variables based on Year 11 MIF data

The Y11MIF file contains information about the participants enrolled in the study gathered from Section B of the Medication Inventory Form. This file contains 7,359 records and has multiple records per participant (i.e., one record per participant per drug). The Y11MIFCOD contains one record for each individual ingredient in every medication the participant is taking (i.e., one record per participant per drug/ingredient pair). This file contains 8,003 observations and has multiple records per participant.

Important changes from Years 1-6 are that non-prescription medications are no longer inventoried, and the period of time during which the medication was last used has been changed from 2 weeks to 30 days. In addition, the medication inventory form was changed significantly for Year 8 and beyond, and reason for use and strength are no longer collected. Because strength is not collected, the old variable MIFDRCOD, which was a strength-specific medication code, no longer exists. Instead a non-specific DRUGCODE (formerly called DRCODENS) specifies a group of medications with the same ingredients. Duration of use (MIFDUR) is collected as a categorical variable (<1 month, 1 month-1 year, 1-3 years, 3-5 years, and >5 years), rather than a start date, which was not very reliable. Frequency of use (MIFFREQ) is now collected only as Regular/PRN. A new variable MIFUSE indicates whether the medication was still being used at the time of the inventory. Other new variables to use are INGNAME instead of INGDESC, and MIFFRMCODE instead of MIFFORM (note that the formulation code is different from the MIFFORM variable used in years 1-6).

The Y11RxCalc file contains 54 indicator and categorical variables created by Health ABC investigators to indicate Year 11 usage of a wide variety of medication categories plus the variable Y11RxTOT that totals the number of different prescription medications reported by the participant at the baseline visit. Documentation showing how these variables were created can be found in Appendix III.

The analyst is cautioned to read the documentation in Appendix III to be sure the medications captured by the variable are really what's needed for their analysis before using these variables. Some variables, (e.g. Y11OSTDRG) have names that may imply a reason for use, but in most cases actually refer to a class or classes of drugs often used for that reason, without regard to the reason the medication was prescribed for that particular participant, which is no longer collected.

There have been several changes to the RxCalc indicator variables brought about by the change in the way medications are collected. Previously, for a few variables, notably YxDEPDRG, YxALPHBK, and YxPRSDRG, reason for use was taken into account because drugs in these categories are frequently used for more than one reason. A variable similar to YxDEPDRG can no longer be created without reason for use, so it has been dropped. The separate antidepressant drug class variables (e.g. Y11SSRI, Y11MAOINH) were not limited by reason for use, so they remain.

Among men, terazosin, doxazosin, and prazosin were prescribed approximately equally often as an antihypertensive as for BPH. So from Year 1 through Year 6, the reason for use was taken into account in dividing these meds between YxALPHBK and YxPRSDRG. Women were assumed always to be taking these for hypertension. Since reason for use is no longer available, terazosin, doxazosin, and prazosin have been split out into a new variable called Y11ALPHAMALE (used only in males), which the investigator will need to decide how to combine with alpha blockers or prostate drugs, when these variables are used in analysis. These three medications (when used in males) have also been <u>removed</u> from the latter two indicator variables, to avoid high false positives. Since the resulting variables are no longer equivalent to the earlier variables, they have been renamed Y11ALPHABLOCK and Y11BPHDRG, respectively. This change also affects Y11HBPDRG, which indicates whether any of the separate hypotensive indicator variables (Y11BETABK, Y11ALPHABLOCK, Y11HYPOTN, Y11ACEINH, Y11ANGTN2, Y11HYDRLZ, Y11CACHBK, Y11DIURO, Y11THIAZ, orY11LOOPDI) is equal to 1. Since the alpha blocker indicator no longer contains terazosin, doxazosin, and prazosin, the investigator will again need to decide which participants with Y11ALPHAMALE=1 to include, if any.

Similarly, the earlier variable YxCALCM took into account a reason for use when calcium carbonate or calcium phosphate was used, to avoid false positives from occasional use of calcium-based antacids. With the new way medications are collected, this had to be revised so that any regular use of calcium carbonate or calcium phosphate, or <u>any</u> use of any of the other calcium medications is considered to be use of a calcium supplement. Again, the variable was renamed Y11CALCSUPP to distinguish it from its not-quite-equivalent previous counterpart.

2. <u>Cross reference of dataset names with exact source</u>

A complete list of variable names for the MIF datasets can be found under the “Proc Contents for All Datasets” link (search under Y11MIF, Y11MIFCOD, or Y11RXCALC). Variable names can also be found on the annotated forms. Please note that not all variables on the forms are

contained in the datasets. All variables not found in the dataset are listed in Dropped Variables and Alternates (Appendix I). Alternate variables to use (if applicable) are also listed.

3. Dataset structure and contents

The Y11MIF and Y11MIFCOD files contain multiple observations per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*

4. Condition of data

a. Known data errors: None at this time.

b. Strengths and weaknesses of dataset items: There are a small number of medication records that could not be coded except in general catch-all categories because information from the participants was incomplete on the Medication Inventory Form, and could not be retrieved during editing. Most of these will never be coded more precisely. A few medications could not be coded at all or had one or more ingredients not listed in the IDIS dictionary. These have been mapped to Uncodable ingredient.

MIF collection in Health ABC, while very complete, has the disadvantage that the medication dictionary does not contain all brands of multivitamins, and MIF coders are allowed to code any multivitamin (containing 3 or more ingredients) as simply "multivitamin." The vast majority of multivitamins in Health ABC are coded in this way, thus hampering any analysis that wishes to look at supplementation of specific vitamins. In addition, now that only prescription medications are collected, most multivitamins will be missed.

A merged dataset (Y11MIFCOD) has been created for the analysts' convenience. This file has one record per participant/ingredient pair.

In addition, a MIF Legend (and frequencies for the Year 11 MIF data) has been created (Y11MIFLegend.xls in the MIF Legend folder. This legend can be very helpful for identifying participants taking certain classes of medication. It is also reproduced in Appendix II. The following comments about corrections and continuing anomalies in the Y11MIFCOD can best be understood by referring to this hierarchical legend.

Ingredients are mapped to medications through use of the IDIS dictionary for consistency with the WHAS data. From time to time, IDIS re-maps ingredients from one code to another, as well as adding new medications and new ingredients to their dictionary. Every effort has been made to update these codes throughout the dataset; in particular to eliminate duplicate codes for single ingredients. However, some ingredients still have more than one ingredient code because of the way IDIS has structured its hierarchy. For example, calcium appears both under

* Must link to Health ABC participant history file (PH) to add this variable.

"calcium supplements" (third level hierarchy 40121200) and under "antacids and adsorbents" (second level hierarchy 56040000), depending on its reason for use. In addition, some ingredients may be used for two very different formulations. Most notably, "conjugated estrogens" (INGCODE= 68160007) is used both for oral and topical estrogen. The analyst should make use of the variable MIFFORM to ensure that the data are subsetted to the desired group of medications.

As mentioned in Memo #1244, IDIS has several non-standard third-level hierarchy codes, which cannot be changed unless IDIS changes them. The analyst is reminded to be careful with how these are specified in any algorithm used to pull out particular medications. These non-standard codes are listed below:

1. The third-level heading "antifungals-imidazoles" has the non-standard code of 8120501. The third level of the hierarchy usually ends in a double zero. In addition, the previous third-level heading is "antibiotics-antifungal" (81204xx), which obviously should include imidazole antifungals. Therefore, to search for the general class of antifungal medications, including both imidazole and non-imidazole antifungals, you should search for both 81204xx and 81205xx.

2. The third-level heading "antibiotics-other" (81228xx) contains more than 100 fourth-level ingredients, so to search for the general class of "other antibiotics" you should include both 81228xx and 81229xx. Fortunately, you would normally only include "other antibiotics" along with all antibiotics, by using the second-level heading "antibiotics" (812xxxx).

3. The third-level heading "NSAID" (280804xx) contains more than 100 fourth-level ingredients, so you should include 280804xx through 280805xx in your search for NSAIDs.

4. The third-level heading "salicylates" has the non-standard code of 28080750, and it includes ingredients coded as 2808076x and 2808077x.

5. The first-level heading "enzymes" (44xxxxxx) also includes Enzyme Inhibitors, and so might more clearly be headed "Enzymes and Enzyme Inhibitors." Enzymes alone are a second-level category also called "enzymes." For "enzymes" you should search for 4400xxxx, while for "enzyme inhibitors" you should search for 4410xxxx.

8. The catch-all category "unclassified therapeutic agents" is another heading that contains more than 100 fourth-level ingredients. Any ingredient from 9200xxxx through 9250xxxx falls under the general third-level heading "unclassified therapeutic agents." Another third-level subheading of "unclassified therapeutic agents" is "herbal medicines" (92510000). Bisphosphonates have now been given a separate second-level heading, albeit still under "unclassified therapeutic agents." Alendronate has a new ingredient number (92600101), and three other bisphosphonates (etidronate, ibandronate, and risedronate) taken by Health ABC participants in Year 11 also have new ingredient numbers (92600104, 92600106, and 92600109, respectively).

Investigators finding anomalies in the medication dataset are urged to report these anomalies to the Coordinating Center (HABCHelp@psg.ucsf.edu).

c. Missing Value Conventions: See Special Missing Value Codes (below) for special missing value codes applied.

5. Dataset index formulation and key variable mapping

The Y11MIF file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

The file Y11MIFCOD has one record per ingredient/participant pair. Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging subsets of either Y11MIF or Y11MIFCOD with other datasets, taking care to avoid one-to-many merge problems.

7. Special missing value codes

SAS allows for stratification of missing values. The following missing values have been assigned:

. ='Missing Form'
.A='A:Not Applicable'
.M='M:Missing'
.N='N:Not Required'

Description

. : Missing Form
Used when a value is missing because the entire form has not been entered.

A: Not Applicable
Used when a value is missing but the value is not required (due to simple skip pattern logic)

M:Missing
Used to flag missing values when the value is required (i.e., true missing values).

N:Not Required
Used when a value is missing but the value is not required (not due to simple skip pattern logic). For example, for checkbox variables which are "Check all that apply: " each one, individually, is not required. In these cases, a summary calculated variable (not included in the database) was used to edit missing responses. Some variables whose skip pattern logic is non-standard (i.e., the skip pattern involves several variables and forms) also have .N flags when missing, whether or not a response was required due to the skip pattern.

Appendix I

DROPPED VARIABLES AND ALTERNATES

Variable omitted	Variable to use
MAID	HABCID
MAACROS	N/A (confidentiality)

Appendix II
Year 11 MIF Legend and Frequencies for Y11MIFCOD

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
2000000	ANTIGOUT AGENTS	56	0.70	52	4.06
2000000	ANTIGOUT AGENTS	56	0.70	52	4.06
2000000	ANTIGOUT AGENTS	9	0.11	9	0.70
2000002	COLCHICINE	9	0.11	9	0.70
2000200	ANTIGOUT AGENTS-URICOSURICS	2	0.03	2	0.16
2000203	PROBENECID	2	0.02	2	0.16
2000400	ANTIGOUT-XANTH OXIDASE INHIB	45	0.56	45	3.51
2000401	ALLOPURINOL	45	0.56	45	3.51
4000000	ANTIHISTAMINES	84	1.05	78	6.09
4000000	ANTIHISTAMINES	84	1.05	78	6.09
4000000	ANTIHISTAMINES	84	1.05	78	6.09
4000001	DESLORATADINE	4	0.05	4	0.31
4000003	CHLORPHENIRAMINE	3	0.04	3	0.23
4000006	DIPHENHYDRAMINE	5	0.06	5	0.39
4000007	LEVOCETIRIZINE	4	0.05	4	0.31
4000010	PROMETHAZINE	6	0.07	6	0.47
4000012	CYPROHEPTADINE	3	0.04	3	0.23
4000016	FEXOFENADINE	23	0.29	23	1.80
4000021	KETOTIFEN	1	0.01	1	0.08
4000027	AZELASTINE	8	0.10	8	0.62
4000029	LORATADINE	16	0.20	16	1.25
4000031	CETIRIZINE	10	0.12	10	0.78
4000078	BROMPHENIRAMINE	1	0.01	1	0.08
8000000	ANTIINFECTIVES	96	1.20	85	6.64
8120000	ANTIBIOTICS	67	0.84	63	4.92
8120200	ANTIBIOTICS-AMINOGLYCOSIDES	3	0.04	3	0.23
8120201	TOBRAMYCIN	2	0.02	2	0.16
8120203	NEOMYCIN	1	0.01	1	0.08
8120400	ANTIBIOTICS-ANTIFUNGAL	5	0.06	5	0.39
8120405	NYSTATIN	3	0.04	3	0.23
8120417	TERBINAFINE	2	0.02	2	0.16
8120501	ANTIFUNGALS-IMIDAZOLES	9	0.11	9	0.70
8120502	CLOTRIMAZOLE	5	0.06	5	0.39
8120511	MICONAZOLE	1	0.01	1	0.08
8120512	KETOCONAZOLE	3	0.04	3	0.23
8120600	ANTIBIOTICS-CEPHALOSPORINS	8	0.10	8	0.62
8120601	CEPHALEXIN	6	0.07	6	0.47
8120645	CEFUROXIME AXETIL	2	0.02	2	0.16
8121200	ANTIBIOTICS-MACROLIDES	4	0.05	4	0.31

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
8121217	AZITHROMYCIN	2	0.02	2	0.16
8121292	ERYTHROMYCIN ESTOLATE	2	0.02	2	0.16
8121600	ANTIBIOTICS-PENICILLINS	11	0.14	11	0.86
8121601	AMPICILLIN	2	0.02	2	0.16
8121607	PENICILLIN G	1	0.01	1	0.08
8121609	PENICILLIN V	1	0.01	1	0.08
8121690	AMOXICILLIN	7	0.09	7	0.55
8122000	ANTIBIOTICS-QUINOLONES	12	0.15	12	0.94
8122004	CIPROFLOXACIN	6	0.07	6	0.47
8122020	LEVOFLOXACIN	2	0.02	2	0.16
8122025	GATIFLOXACIN	1	0.01	1	0.08
8122029	MOXIFLOXACIN	3	0.04	3	0.23
8122400	ANTIBIOTICS-TETRACYCLINES	9	0.11	9	0.70
8122404	TETRACYCLINE	3	0.04	3	0.23
8122489	MINOCYCLINE	1	0.01	1	0.08
8122491	DOXYCYCLINE	5	0.06	5	0.39
8122800	ANTIBIOTICS-OTHER	5	0.06	4	0.31
8122801	BACITRACIN	3	0.04	3	0.23
8122811	POLYMYXIN B	2	0.02	2	0.16
8123000	ANTIBIOTICS-RIFAMYCINS	1	0.01	1	0.08
8123099	RIFAMPIN	1	0.01	1	0.08
8180000	ANTIVIRALS	4	0.05	4	0.31
8180000	ANTIVIRALS	4	0.05	4	0.31
8180001	AMANTADINE	1	0.01	1	0.08
8180010	ACYCLOVIR	2	0.02	2	0.16
8180071	VALACYCLOVIR	1	0.01	1	0.08
8200000	PLASMODICIDES (ANTIMALARIALS)	6	0.08	6	0.47
8200000	PLASMODICIDES (ANTIMALARIALS)	6	0.08	6	0.47
8200002	QUININE	4	0.05	4	0.31
8200095	HYDROXYCHLOROQUINE	2	0.02	2	0.16
8240000	SULFONAMIDES	4	0.05	4	0.31
8240000	SULFONAMIDES	4	0.05	4	0.31
8240002	SULFASALAZINE	1	0.01	1	0.08
8240006	SULFAMETHOXAZOLE	3	0.04	3	0.23
8320000	TRICHOMONACIDES	3	0.04	3	0.23
8320000	TRICHOMONACIDES	3	0.04	3	0.23
8320004	METRONIDAZOLE	3	0.04	3	0.23
8360000	URINARY GERMICIDES	7	0.09	7	0.55
8360000	URINARY GERMICIDES	7	0.09	7	0.55
8360001	METHENAMINE	1	0.01	1	0.08
8360003	NITROFURANTOIN	6	0.07	6	0.47
8400000	ANTIINFECTIVES-OTHER	5	0.06	5	0.39

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
8400000	ANTIINFECTIVES-OTHER	5	0.06	5	0.39
8400071	TRIMETHOPRIM	5	0.06	5	0.39
10000000	ANTINEOPLASTIC AGENTS	109	1.36	109	8.51
10020000	ANTINEOPLASTICS-ALKALOIDS	1	0.01	1	0.08
10020400	VINCA ALKALOIDS	1	0.01	1	0.08
10020401	VINORELBINE	1	0.01	1	0.08
10040000	ANTINEOPLASTICS-ALKYLATING	1	0.01	1	0.08
10040400	NITROGEN MUSTARDS	1	0.01	1	0.08
10040403	CYCLOPHOSPHAMIDE	1	0.01	1	0.08
10080000	ANTIMETABOLITES	7	0.09	7	0.55
10081200	ANTIMETABOLITES-FOLIC ACID	7	0.09	7	0.55
10081255	METHOTREXATE	7	0.09	7	0.55
10100000	ANTINEOPLASTICS-HORMONAL	4	0.05	4	0.31
10100000	ANTINEOPLASTICS-HORMONAL	4	0.05	4	0.31
10100047	MEGESTROL	3	0.04	3	0.23
10100085	TAMOXIFEN	1	0.01	1	0.08
10120000	ANTINEOPLASTICS-OTHER	96	1.20	96	7.49
10120000	ANTINEOPLASTICS-OTHER	54	0.68	54	4.22
10120019	HYDROXYUREA	3	0.04	3	0.23
10120054	LEUPROLIDE	2	0.02	2	0.16
10120081	FINASTERIDE	49	0.61	49	3.83
10120101	SULOFENUR	42	0.53	42	3.28
10120114	LETROZOLE	3	0.04	3	0.23
10120127	ANASTROZOLE	7	0.09	7	0.55
10120165	DUTASTERIDE	32	0.40	32	2.50
12000000	AUTONOMIC AGENTS	1112	13.89	749	58.47
12040000	PARASYMPATHOMIMETIC AGENTS	90	1.13	88	6.87
12040000	PARASYMPATHOMIMETIC AGENTS	90	1.13	88	6.87
12040002	BETHANECHOL	4	0.05	4	0.31
12040012	GALANTAMINE	8	0.10	8	0.62
12040020	RIVASTIGMINE	6	0.07	6	0.47
12040022	CEVIMELINE	1	0.01	1	0.08
12040025	DONEPEZIL	64	0.80	64	5.00
12040099	PILOCARPINE	7	0.09	7	0.55
12080000	PARASYMPATHOLYTIC AGENTS	138	1.73	120	9.37
12080000	PARASYMPATHOLYTIC AGENTS	92	1.15	78	6.09
12080001	ATROPINE	3	0.04	3	0.23
12080002	BELLADONNA	3	0.04	3	0.23
12080005	DICYCLOMINE	12	0.15	12	0.94
12080007	METHSCOPOLAMINE	1	0.01	1	0.08
12080028	IPRATROPIUM BROMIDE	33	0.41	31	2.42
12080040	TROSPIUM	5	0.06	5	0.39

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
12080047	CLIDINIUM	2	0.02	2	0.16
12080059	TIOTROPIUM BROMIDE	15	0.19	15	1.17
12080079	HYOSCYAMINE	8	0.10	8	0.62
12080086	DARIFENACIN	10	0.12	10	0.78
12080101	SOLIFENACIN	12	0.15	12	0.94
12080101	SOLIFENACIN	12	0.15	12	0.94
12080800	ANTIPARKINSONIAN AGENTS	34	0.43	34	2.65
12080806	BENZTROPINE	2	0.02	2	0.16
12080809	MEMANTINE	32	0.40	32	2.50
12120000	SYMPATHOMIMETIC AGENTS	122	1.53	89	6.95
12120000	SYMPATHOMIMETIC AGENTS	122	1.53	89	6.95
12120002	EPINEPHRINE	2	0.02	2	0.16
12120029	PIRBUTEROL	2	0.02	2	0.16
12120034	MIDODRINE	4	0.05	4	0.31
12120046	FORMOTEROL	8	0.10	7	0.55
12120047	SALMETEROL	34	0.42	34	2.65
12120053	LEVALBUTEROL	5	0.06	5	0.39
12120066	ALBUTEROL	60	0.75	56	4.37
12120094	TERBUTALINE	1	0.01	1	0.08
12120098	PSEUDOEPHEDRINE	6	0.07	6	0.47
12160000	SYMPATHOLYTIC AGENTS	743	9.33	624	48.71
12160100	BETA-ADRENERGIC BLOCKERS	559	7.02	527	41.14
12160107	LABETALOL	7	0.09	7	0.55
12160109	CARTEOLOL	2	0.02	2	0.16
12160114	BETAXOLOL	1	0.01	1	0.08
12160115	TIMOLOL	82	1.02	80	6.25
12160123	BISOPROLOL	11	0.14	11	0.86
12160137	ATENOLOL	125	1.56	125	9.76
12160145	METOPROLOL	230	2.87	230	17.95
12160146	NADOLOL	5	0.06	5	0.39
12160150	PROPRANOLOL	17	0.21	17	1.33
12160153	CARVEDILOL	54	0.67	53	4.14
12160167	PINDOLOL	1	0.01	1	0.08
12160178	SOTALOL	21	0.26	21	1.64
12160183	NEBIVOLOL	2	0.02	2	0.16
12160189	LEVOBUNOLOL	1	0.01	1	0.08
12160400	ALPHA-ADRENERGIC BLOCKERS	184	2.31	180	14.05
12160401	TERAZOSIN	52	0.65	52	4.06
12160404	PRAZOSIN	5	0.06	5	0.39
12160407	ALFUZOSIN	8	0.10	8	0.62
12160411	TAMSULOSIN	92	1.15	92	7.18
12160419	DOXAZOSIN	27	0.34	27	2.11

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
12200000	SKELETAL MUSCLE RELAXANTS	19	0.24	18	1.41
12200000	SKELETAL MUSCLE RELAXANTS	19	0.24	18	1.41
12200001	CARISOPRODOL	1	0.01	1	0.08
12200005	METHOCARBAMOL	5	0.06	5	0.39
12200009	CYCLOBENZAPRINE	9	0.11	8	0.62
12200091	CHLORZOXAZONE	2	0.02	2	0.16
12200092	BACLOFEN	1	0.01	1	0.08
12200097	METAXALONE	1	0.01	1	0.08
14000000	BIOLOGICAL RESPONSE MODIFIERS	2	0.02	2	0.16
14000000	BIOLOGICAL RESPONSE MODIFIERS	2	0.03	2	0.16
14000000	BIOLOGICAL RESPONSE MODIFIERS	1	0.01	1	0.08
14000041	ETANERCEPT	1	0.01	1	0.08
14000501	ANTI-VEGF RECEPTOR RIBOZYME	1	0.01	1	0.08
14000508	RANIBIZUMAB	1	0.01	1	0.08
20000000	BLOOD FORMATION & COAGULATION	325	4.06	287	22.40
20040000	ANTIANEMIA AGENTS	67	0.84	61	4.76
20040000	ANTIANEMIA AGENTS	10	0.13	10	0.78
20040002	EPOETIN	6	0.07	6	0.47
20040006	DARBEPOETIN ALFA	4	0.05	4	0.31
20040400	IRON PREPARATIONS	57	0.72	55	4.29
20040400	IRON PREPARATIONS	1	0.01	1	0.08
20040404	FERROUS GLUCONATE	4	0.05	4	0.31
20040405	FERROUS FUMARATE	4	0.05	4	0.31
20040406	FERROUS SULFATE	31	0.39	31	2.42
20040409	IRON POLYSACCHARIDE COMPLEX	4	0.05	4	0.31
20040492	IRON	13	0.16	13	1.01
20120000	COAGULANTS AND ANTICOAGULANTS	256	3.21	244	19.05
20120200	ANTICOAGULANTS-COUMARIN DERIV	131	1.64	129	10.07
20120208	WARFARIN	131	1.64	129	10.07
20120600	PLATELET AGGREGAT INHIBITORS	125	1.57	122	9.52
20120642	CILOSTAZOL	8	0.10	8	0.62
20120645	CLOPIDOGREL	117	1.46	115	8.98
20400000	THROMBOLYTIC AGENTS	2	0.03	1	0.08
20400000	THROMBOLYTIC AGENTS	2	0.03	1	0.08
20400003	DOCOSAHEXAENOIC ACID	1	0.01	1	0.08
20400004	EICOSAPENTAENOIC ACID	1	0.01	1	0.08
24000000	CARDIOVASCULAR AGENTS	2058	25.72	1032	80.56
24040000	CARDIAC AGENTS	101	1.27	93	7.26
24040000	CARDIAC AGENTS	11	0.14	11	0.86
24040008	QUINIDINE	2	0.02	2	0.16
24040021	MEXILETINE	1	0.01	1	0.08
24040034	PROPAFENONE	4	0.05	4	0.31

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
24040067	DOFETILIDE	2	0.02	2	0.16
24040099	FLECAINIDE	2	0.02	2	0.16
24040100	CARDIAC GLYCOSIDES	90	1.13	87	6.79
24040104	DIGOXIN	77	0.96	76	5.93
24040220	AMIODARONE	13	0.16	13	1.01
24060000	ANTILIPEMIC AGENTS	634	7.96	572	44.65
24060000	ANTILIPEMIC AGENTS	77	0.97	77	6.01
24060009	CHOLESTYRAMINE RESIN	4	0.05	4	0.31
24060012	COLESEVELAM	1	0.01	1	0.08
24060018	EZETIMIBE	69	0.86	69	5.39
24060095	COLESTIPOL	3	0.04	3	0.23
24060200	ANTILIPEMIC AGTS-HMG COA REDUC	529	6.64	526	41.06
24060201	ROSUVASTATIN	20	0.25	20	1.56
24060202	ATORVASTATIN	155	1.94	155	12.10
24060204	LOVASTATIN	24	0.30	24	1.87
24060205	SIMVASTATIN	296	3.70	296	23.11
24060207	PRAVASTATIN	27	0.34	27	2.11
24060208	FLUVASTATIN	7	0.09	7	0.55
24060400	ANTILIPEMIC AGTS-FIBRIC ACID	28	0.35	28	2.19
24060403	GEMFIBROZIL	9	0.11	9	0.70
24060404	FENOFIBRATE	19	0.24	19	1.48
24080000	HYPOTENSIVE AGENTS	720	9.04	664	51.83
24080000	HYPOTENSIVE AGENTS	90	1.13	85	6.64
24080006	METHYLDOPA	3	0.04	3	0.23
24080010	RESERPINE	2	0.02	2	0.16
24080028	BRIMONIDINE	50	0.62	49	3.83
24080037	MINOXIDIL	1	0.01	1	0.08
24080042	ALISKIREN	3	0.04	3	0.23
24080063	GUANFACINE	2	0.02	2	0.16
24080064	CLONIDINE	29	0.36	29	2.26
24080200	HYPOTENSIVE AGENTS-ACE INHIB	391	4.91	389	30.37
24080202	QUINAPRIL	38	0.47	38	2.97
24080203	CAPTOPRIL	5	0.06	5	0.39
24080206	PERINDOPRIL	2	0.02	2	0.16
24080208	ENALAPRIL	36	0.45	36	2.81
24080213	LISINOPRIL	208	2.60	207	16.16
24080214	RAMIPRIL	32	0.40	32	2.50
24080216	BENAZEPRIL	60	0.75	60	4.68
24080218	FOSINOPRIL	6	0.07	6	0.47
24080223	TRANDOLAPRIL	1	0.01	1	0.08
24080232	MOEXIPRIL	3	0.04	3	0.23
24080400	HYPOTENSIVE AGENTS-ANGIOTEN II	239	3.00	237	18.50

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
24080401	LOSARTAN	41	0.51	40	3.12
24080402	CANDESARTAN	10	0.12	10	0.78
24080403	VALSARTAN	107	1.34	107	8.35
24080405	IRBESARTAN	32	0.40	32	2.50
24080410	TELMISARTAN	11	0.14	11	0.86
24080412	OLMESARTAN	38	0.47	38	2.97
24120000	VASODILATING AGENTS	603	7.57	514	40.12
24120000	VASODILATING AGENTS	62	0.78	60	4.68
24120003	ALPROSTADIL	1	0.01	1	0.08
24120006	HISTAMINE	1	0.01	1	0.08
24120021	PENTOXIFYLLINE	8	0.10	8	0.62
24120047	RANOLAZINE	3	0.04	3	0.23
24120050	BOSENTAN	1	0.01	1	0.08
24120074	AMBRISENTAN	1	0.01	1	0.08
24120091	DIPYRIDAMOLE	17	0.21	17	1.33
24120094	HYDRALAZINE	28	0.35	27	2.11
24120101	SILDENAFIL	1	0.01	1	0.08
24120103	TADALAFIL	1	0.01	1	0.08
24120200	VASODILATORS-NITRATES	113	1.42	101	7.88
24120205	NITROGLYCERIN	46	0.57	44	3.43
24120207	ISOSORBIDE DINITRATE	27	0.34	27	2.11
24120212	ISOSORBIDE MONONITRATE	40	0.50	40	3.12
24120400	VASODILATORS-CA CHANNEL BLOCK	428	5.37	427	33.33
24120406	NISOLDIPINE	6	0.07	6	0.47
24120410	DILTIAZEM	71	0.89	71	5.54
24120413	ISRADIPINE	5	0.06	5	0.39
24120415	NICARDIPINE	1	0.01	1	0.08
24120416	NIFEDIPINE	38	0.47	37	2.89
24120421	VERAPAMIL	43	0.54	43	3.36
24120422	AMLODIPINE	235	2.94	235	18.35
24120449	FELODIPINE	29	0.36	29	2.26
28000000	CENTRAL NERVOUS SYSTEM AGENTS	1095	13.68	644	50.27
28080000	ANALGESICS & ANTIPYRETICS	611	7.67	452	35.28
28080400	NSAID	79	0.99	76	5.93
28080422	DICLOFENAC SODIUM	15	0.19	15	1.17
28080428	SULINDAC	6	0.07	6	0.47
28080437	PIROXICAM	1	0.01	1	0.08
28080455	ETODOLAC	2	0.02	2	0.16
28080459	NABUMETONE	3	0.04	3	0.23
28080463	INDOMETHACIN	1	0.01	1	0.08
28080509	IBUPROFEN	12	0.15	12	0.94
28080512	KETOPROFEN	1	0.01	1	0.08

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28080513	NAPROXEN	14	0.17	14	1.09
28080526	MELOXICAM	22	0.27	22	1.72
28080537	DICLOFENAC POTASSIUM	1	0.01	1	0.08
28080538	NEPAFENAC	1	0.01	1	0.08
28080600	NSAID-COX 2 INHIBITORS	41	0.51	41	3.20
28080601	CELECOXIB	41	0.51	41	3.20
28080750	SALICYLATES	280	3.51	278	21.70
28080750	SALICYLATES	1	0.01	1	0.08
28080751	ASPIRIN	275	3.44	274	21.39
28080764	SALSALATE	3	0.04	3	0.23
28080768	DIFLUNISAL	1	0.01	1	0.08
28080800	ANALGESICS-OPIOID	94	1.18	85	6.64
28080810	FENTANYL	3	0.04	3	0.23
28080817	MEPERIDINE	1	0.01	1	0.08
28080819	MORPHINE	2	0.02	2	0.16
28080840	PROPOXYPHENE	32	0.40	31	2.42
28080854	TRAMADOL	32	0.40	32	2.50
28080883	OXYCODONE	24	0.30	21	1.64
28081200	ANALGESICS & ANTIPYRET-OTHER	117	1.47	107	8.35
28081219	KETOROLAC	3	0.04	3	0.23
28081221	ACETAMINOPHEN	112	1.40	103	8.04
28081222	BROMFENAC	2	0.02	2	0.16
28120000	ANTICONVULSANTS	105	1.32	94	7.34
28120400	ANTICONVULS-BARBITURATES	16	0.20	16	1.25
28120405	PHENOBARBITAL	4	0.05	4	0.31
28120407	PRIMIDONE	12	0.15	12	0.94
28120800	ANTICONVULS-HYDANTOINS	15	0.19	14	1.09
28120805	PHENYTOIN	15	0.19	14	1.09
28122000	ANTICONVULS-OTHER	74	0.93	71	5.54
28122007	CARBAMAZEPINE	2	0.02	2	0.16
28122015	VALPROIC ACID	3	0.04	3	0.23
28122016	PREGABALIN	17	0.21	17	1.33
28122020	GABAPENTIN	46	0.57	46	3.59
28122024	LAMOTRIGINE	2	0.02	2	0.16
28122035	TOPIRAMATE	2	0.02	2	0.16
28122040	LEVETIRACETAM	2	0.02	2	0.16
28160000	PSYCHOTHERAPEUTIC AGENTS	208	2.61	188	14.68
28160400	ANTIDEPRESSANTS-OTHER	27	0.34	27	2.11
28160415	TRAZODONE	12	0.15	12	0.94
28160434	BUPROPION	7	0.09	7	0.55
28160458	VENLAFAXINE	7	0.09	7	0.55
28160486	NEFAZODONE	1	0.01	1	0.08

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28160500	ANTIDEPRESSANTS-MAO INHIB	2	0.03	2	0.16
28160520	SELEGILINE	1	0.01	1	0.08
28160521	RASAGILINE	1	0.01	1	0.08
28160600	ANTIDEPRESSANTS-TRI/TETRACYC	38	0.48	37	2.89
28160601	AMITRIPTYLINE	17	0.21	17	1.33
28160602	IMIPRAMINE	2	0.02	2	0.16
28160617	MIRTAZAPINE	12	0.15	12	0.94
28160681	DOXEPIN	2	0.02	2	0.16
28160689	DESIPRAMINE	1	0.01	1	0.08
28160695	NORTRIPTYLINE	4	0.05	4	0.31
28160700	ANTIDEPRESSANTS-SSRIS	116	1.46	115	8.98
28160701	FLUOXETINE	9	0.11	9	0.70
28160702	PAROXETINE	17	0.21	17	1.33
28160703	SERTRALINE	32	0.40	31	2.42
28160705	CITALOPRAM	26	0.32	26	2.03
28160710	DULOXETINE	10	0.12	10	0.78
28160711	ESCITALOPRAM	22	0.27	22	1.72
28160800	ANTIPSYCHOTICS-OTHER	19	0.24	19	1.48
28160807	HYDROXYZINE	9	0.11	9	0.70
28160822	RISPERIDONE	4	0.05	4	0.31
28160834	QUETIAPINE	3	0.04	3	0.23
28160836	OLANZAPINE	2	0.02	2	0.16
28160846	ARIPIPRAZOLE	1	0.01	1	0.08
28160900	ANTIPSYCHOTICS-PHENOTHIAZINES	4	0.05	4	0.31
28160909	PERPHENAZINE	2	0.02	2	0.16
28160912	THIORIDAZINE	1	0.01	1	0.08
28160996	TRIFLUPROMAZINE	1	0.01	1	0.08
28161000	ANTIPSYCHOTICS-BUTYROPHENONES	1	0.01	1	0.08
28161014	HALOPERIDOL	1	0.01	1	0.08
28161200	PSYCHOTHERAPEUTIC AGTS-OTHER	1	0.01	1	0.08
28161204	LITHIUM	1	0.01	1	0.08
28200000	RESPIRATORY & CEREBRAL STIM	5	0.06	4	0.31
28200000	RESPIRATORY & CEREBRAL STIM	5	0.06	4	0.31
28200002	AMPHETAMINE	1	0.01	1	0.08
28200006	DEXTROAMPHETAMINE	1	0.01	1	0.08
28200009	METHYLPHENIDATE	2	0.02	2	0.16
28200080	CAFFEINE	1	0.01	1	0.08
28240000	ANXIOLYTICS	134	1.68	125	9.76
28240200	ANXIOLYTICS-BENZODIAZEPINES	101	1.27	99	7.73
28240202	CHLORDIAZEPOXIDE	5	0.06	5	0.39
28240205	DIAZEPAM	12	0.15	12	0.94
28240212	CLONAZEPAM	19	0.24	19	1.48

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28240215	OXAZEPAM	1	0.01	1	0.08
28240222	TRIAZOLAM	1	0.01	1	0.08
28240228	CLORAZEPATE	3	0.04	3	0.23
28240231	TEMAZEPAM	10	0.12	10	0.78
28240232	ALPRAZOLAM	26	0.32	26	2.03
28240276	LORAZEPAM	24	0.30	24	1.87
28240800	ANXIOLYTICS-OTHER	33	0.41	32	2.50
28240829	ESZOPICLONE	1	0.01	1	0.08
28240830	RAMELTEON	1	0.01	1	0.08
28240834	ZOLPIDEM	28	0.35	28	2.19
28240837	BUSPIRONE	2	0.02	2	0.16
28240856	ZALEPLON	1	0.01	1	0.08
28280000	DOPAMINERGICS	32	0.40	29	2.26
28280000	DOPAMINERGICS	32	0.40	29	2.26
28280002	LEVODOPA	14	0.17	14	1.09
28280011	ROPINIROLE	11	0.14	11	0.86
28280013	PRAMIPEXOLE	7	0.09	7	0.55
40000000	ELECTROLYTE SOLUTIONS	890	11.12	615	48.01
40040000	ACIDIFYING AGENTS	1	0.01	1	0.08
40040000	ACIDIFYING AGENTS	1	0.01	1	0.08
40040099	SODIUM BIPHOSPHATE	1	0.01	1	0.08
40080000	ALKALINIZING AGENTS	15	0.19	15	1.17
40080000	ALKALINIZING AGENTS	15	0.19	15	1.17
40080001	SODIUM BICARBONATE	8	0.10	8	0.62
40080094	POTASSIUM BICARBONATE	1	0.01	1	0.08
40080095	POTASSIUM CITRATE	2	0.02	2	0.16
40080097	SODIUM CITRATE	1	0.01	1	0.08
40080099	TROMETHAMINE	3	0.04	3	0.23
40100000	AMMONIA DETOXICANTS	4	0.05	4	0.31
40100000	AMMONIA DETOXICANTS	4	0.05	4	0.31
40100003	LACTULOSE	4	0.05	4	0.31
40120000	REPLACEMENT SOLUTIONS	182	2.28	171	13.35
40120000	REPLACEMENT SOLUTIONS	148	1.86	145	11.32
40120003	POTASSIUM CHLORIDE	115	1.44	115	8.98
40120004	POTASSIUM GLUCONATE	1	0.01	1	0.08
40120006	SODIUM CHLORIDE	5	0.06	5	0.39
40120008	POTASSIUM SALTS	22	0.27	22	1.72
40120010	MAGNESIUM SALTS	3	0.04	3	0.23
40120095	MAGNESIUM CHLORIDE	2	0.02	2	0.16
40120400	TRACE ELEMENTS	19	0.24	19	1.48
40120400	TRACE ELEMENTS	16	0.20	16	1.25
40120402	SELENIUM	1	0.01	1	0.08

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
40120404	ZINC	2	0.02	2	0.16
40121200	CALCIUM SUPPLEMENTS	15	0.19	15	1.17
40121210	CALCIUM ACETATE	5	0.06	5	0.39
40121211	CALCIUM	10	0.12	10	0.78
40180000	RESINS-POTASSIUM-REMOVING	1	0.01	1	0.08
40180000	RESINS-POTASSIUM-REMOVING	1	0.01	1	0.08
40180099	POLYSTYRENE SULFONATE SALTS	1	0.01	1	0.08
40200000	CALORIC (& NUTRIENT) AGENTS	2	0.03	2	0.16
40200000	CALORIC (& NUTRIENT) AGENTS	2	0.03	2	0.16
40200007	FISH OIL	2	0.02	2	0.16
40280000	DIURETICS	684	8.59	562	43.87
40280000	DIURETICS	134	1.68	133	10.38
40280013	SPIRONOLACTONE	28	0.35	27	2.11
40280016	TRIAMTERENE	90	1.12	90	7.03
40280025	INDAPAMIDE	14	0.17	14	1.09
40280062	AMILORIDE	2	0.02	2	0.16
40280100	DIURETICS-THIAZIDE	323	4.05	317	24.75
40280101	CHLORTHALIDONE	5	0.06	5	0.39
40280108	HYDROCHLOROTHIAZIDE	313	3.91	307	23.97
40280110	METOLAZONE	5	0.06	5	0.39
40280400	DIURETICS-LOOP	227	2.85	222	17.33
40280401	FUROSEMIDE	206	2.57	204	15.93
40280402	BUMETANIDE	11	0.14	11	0.86
40280405	TORSEMIDE	10	0.12	9	0.70
40360000	IRRIGATING SOLUTIONS	1	0.01	1	0.08
40360000	IRRIGATING SOLUTIONS	1	0.01	1	0.08
40360094	ACETIC ACID	1	0.01	1	0.08
44000000	ENZYMES	24	0.30	18	1.41
44000000	ENZYMES	5	0.06	3	0.23
44000000	ENZYMES	5	0.06	3	0.23
44000021	LACTASE	1	0.01	1	0.08
44000086	AMYLASE	2	0.02	2	0.16
44000095	PROTEOLYTIC ENZYME	2	0.02	2	0.16
44100000	ENZYME INHIBITORS	19	0.24	15	1.17
44100000	ENZYME INHIBITORS	19	0.24	15	1.17
44100044	CARBIDOPA	15	0.19	15	1.17
44100072	ENTACAPONE	4	0.05	4	0.31
48000000	EXPECTORANTS & ANTITUSSIVES	68	0.85	63	4.92
48000000	EXPECTORANTS & ANTITUSSIVES	68	0.85	63	4.92
48000000	EXPECTORANTS & ANTITUSSIVES	68	0.85	63	4.92
48000008	GUAIFENESIN	15	0.19	15	1.17
48000054	BENZONATATE	2	0.02	2	0.16

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48000063	CODEINE	6	0.07	5	0.39
48000072	HYDROCODONE	45	0.56	44	3.43
52000000	EENT AGENTS	181	2.26	138	10.77
52040000	ANTIINFECTIVES (EENT)	7	0.09	7	0.55
52041200	ANTIINFECTIVES (EENT)-OTHER	7	0.09	7	0.55
52041210	OLOPATADINE	4	0.05	4	0.31
52041211	ZINC SULFATE	2	0.02	2	0.16
52041286	CHLORHEXIDINE	1	0.01	1	0.08
52080000	ANTIINFLAMMATORY AGENTS (EENT)	1	0.01	1	0.08
52080000	ANTIINFLAMMATORY AGENTS (EENT)	1	0.01	1	0.08
52080002	LOTEPREDNOL	1	0.01	1	0.08
52100000	CARB ANHYDRASE INHIB (EENT)	51	0.64	50	3.90
52100000	CARB ANHYDRASE INHIB (EENT)	51	0.64	50	3.90
52100004	METHAZOLAMIDE	1	0.01	1	0.08
52100010	DORZOLAMIDE	45	0.56	45	3.51
52100011	BRINZOLAMIDE	5	0.06	5	0.39
52320000	VASOCONSTRICTORS (EENT)	1	0.01	1	0.08
52320000	VASOCONSTRICTORS (EENT)	1	0.01	1	0.08
52320007	TETRAHYDROZOLINE	1	0.01	1	0.08
52360000	EENT AGENTS-OTHER	121	1.52	120	9.37
52360000	EENT AGENTS-OTHER	121	1.52	120	9.37
52360023	BIMATOPROST	32	0.40	32	2.50
52360025	LATANOPROST	48	0.60	48	3.75
52360026	TRAVOPROST	38	0.47	38	2.97
52360095	POLYVINYL ALCOHOL	3	0.04	3	0.23
56000000	GASTROINTESTINAL AGENTS	495	6.19	387	30.21
56040000	ANTACIDS & ADSORBENTS	30	0.38	27	2.11
56040000	ANTACIDS & ADSORBENTS	30	0.38	27	2.11
56040002	ALUMINUM HYDROXIDE	4	0.05	4	0.31
56040004	CALCIUM CARBONATE	10	0.12	10	0.78
56040006	MAGNESIUM HYDROXIDE	3	0.04	3	0.23
56040094	MAGNESIUM OXIDE	12	0.15	12	0.94
56040096	MAGNESIUM TRISILICATE	1	0.01	1	0.08
56080000	ANTIDIARRHEA AGENTS	7	0.09	6	0.47
56080000	ANTIDIARRHEA AGENTS	7	0.09	6	0.47
56080005	DIPHENOXYLATE	3	0.04	3	0.23
56080009	LOPERAMIDE	4	0.05	3	0.23
56100000	ANTIFLATULENTS	10	0.13	9	0.70
56100000	ANTIFLATULENTS	10	0.13	9	0.70
56100001	SIMETHICONE	10	0.12	9	0.70
56120000	CATHARTICS	56	0.70	45	3.51
56120000	CATHARTICS	56	0.70	45	3.51

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
56120001	BISACODYL	8	0.10	8	0.62
56120007	DOCUSATE SODIUM	36	0.45	35	2.73
56120014	PETROLATUM LIQUID	1	0.01	1	0.08
56120019	SODIUM PHOSPHATE	2	0.02	2	0.16
56120079	MAGNESIUM GLUCONATE	1	0.01	1	0.08
56120093	SENNA	8	0.10	8	0.62
56140000	CHOLELITHOTHERAPEUTIC AGENTS	1	0.01	1	0.08
56140000	CHOLELITHOTHERAPEUTIC AGENTS	1	0.01	1	0.08
56140013	URSODIOL	1	0.01	1	0.08
56160000	DIGESTANTS	4	0.05	4	0.31
56160000	DIGESTANTS	4	0.05	4	0.31
56160009	PANCRELIPASE	2	0.02	2	0.16
56160092	LIPASE	2	0.02	2	0.16
56220000	ANTIEMETICS	38	0.48	37	2.89
56220000	ANTIEMETICS	38	0.48	37	2.89
56220005	MECLIZINE	21	0.26	21	1.64
56220016	DRONABINOL	1	0.01	1	0.08
56220019	ONDANSETRON	2	0.02	2	0.16
56220098	METOCLOPRAMIDE	14	0.17	14	1.09
56260000	ANTIULCER AGENTS	338	4.24	325	25.37
56260000	ANTIULCER AGENTS	7	0.09	7	0.55
56260011	MISOPROSTOL	2	0.02	2	0.16
56260018	SUCRALFATE	5	0.06	5	0.39
56260400	ANTIULCER-H2 ANTAGONISTS	68	0.85	68	5.31
56260402	CIMETIDINE	4	0.05	4	0.31
56260405	RANITIDINE	46	0.57	46	3.59
56260410	NIZATIDINE	1	0.01	1	0.08
56260411	FAMOTIDINE	17	0.21	17	1.33
56260600	ANTIULCER-PROTON PUMP INHIB	263	3.30	261	20.37
56260602	OMEPRAZOLE	129	1.61	129	10.07
56260603	LANSOPRAZOLE	33	0.41	33	2.58
56260604	RABEPRAZOLE	6	0.07	6	0.47
56260605	ESOMEPRAZOLE	61	0.76	61	4.76
56260606	PANTOPRAZOLE	34	0.42	34	2.65
56400000	GASTROINTESTINAL AGENTS-OTHER	11	0.14	11	0.86
56400000	GASTROINTESTINAL AGENTS-OTHER	11	0.14	11	0.86
56400007	MESALAMINE	6	0.07	6	0.47
56400013	PSYLLIUM	3	0.04	3	0.23
56400016	BALSALAZIDE	1	0.01	1	0.08
56400031	TEGASEROD	1	0.01	1	0.08
68000000	HORMONES & SYNTHETIC SUBSTANCE	782	9.77	536	41.84
68040000	CORTICOSTEROIDS	141	1.77	121	9.45

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
68040000	CORTICOSTEROIDS	141	1.77	121	9.45
68040003	DEXAMETHASONE	5	0.06	5	0.39
68040004	FLUDROCORTISONE	1	0.01	1	0.08
68040005	HYDROCORTISONE	12	0.15	10	0.78
68040006	METHYLPREDNISOLONE	1	0.01	1	0.08
68040007	PREDNISONE	27	0.34	27	2.11
68040008	TRIAMCINOLONE	15	0.19	14	1.09
68040011	BETAMETHASONE	4	0.05	4	0.31
68040012	FLUNISOLIDE ACETATE	11	0.14	11	0.86
68040092	PREDNISOLONE	6	0.07	6	0.47
68040094	FLUTICASONE	59	0.74	50	3.90
68080000	ANDROGENS	6	0.08	6	0.47
68080000	ANDROGENS	3	0.04	3	0.23
68080006	TESTOSTERONE	2	0.02	2	0.16
68080097	DANAZOL	1	0.01	1	0.08
68080400	ANTIANDROGENS	3	0.04	3	0.23
68080407	BICALUTAMIDE	3	0.04	3	0.23
68160000	ESTROGENS	54	0.68	54	4.22
68160000	ESTROGENS	31	0.39	31	2.42
68160005	ESTRADIOL	7	0.09	7	0.55
68160007	ESTROGENS CONJUGATED	22	0.27	22	1.72
68160020	ESTROPIPATE	2	0.02	2	0.16
68160400	ANTIESTROGENS	23	0.29	23	1.80
68160408	RALOXIFENE	23	0.29	23	1.80
68200000	INSULINS & ANTIDIABETIC AGTS	339	4.26	222	17.33
68200000	INSULINS & ANTIDIABETIC AGTS	11	0.14	11	0.86
68200001	EXENATIDE	2	0.02	2	0.16
68200002	SITAGLIPTIN	9	0.11	9	0.70
68200400	HYPOGLYCEMICS (ORAL)-OTHER	132	1.66	116	9.06
68200402	REPAGLINIDE	9	0.11	9	0.70
68200407	METFORMIN	80	1.00	80	6.25
68200411	ACARBOSE	2	0.02	2	0.16
68200413	NATEGLINIDE	4	0.05	4	0.31
68200417	PIOGLITAZONE	22	0.27	22	1.72
68200418	ROSIGLITAZONE	15	0.19	15	1.17
68200600	SULFONYLUREAS	115	1.44	115	8.98
68200602	CHLORPROPAMIDE	1	0.01	1	0.08
68200609	GLYBURIDE	46	0.57	46	3.59
68200610	GLIMEPIRIDE	22	0.27	22	1.72
68200614	TOLBUTAMIDE	1	0.01	1	0.08
68200637	GLIPIZIDE	45	0.56	45	3.51
68200800	INSULINS	81	1.02	58	4.53

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
68200801	INSULIN	3	0.04	3	0.23
68200805	INSULIN ISOPHANE	11	0.14	11	0.86
68200814	INSULIN GLULISINE	1	0.01	1	0.08
68200817	INSULIN GLARGINE	21	0.26	21	1.64
68200820	INSULIN HUMAN	22	0.27	22	1.72
68200821	INSULIN LISPRO	9	0.11	9	0.70
68200822	INSULIN ASPART	9	0.11	8	0.62
68200823	INSULIN PROTAMINE LISPRO	1	0.01	1	0.08
68200824	INSULIN DETEMIR	4	0.05	4	0.31
68280000	HORMONES-PITUITARY	1	0.01	1	0.08
68280000	HORMONES-PITUITARY	1	0.01	1	0.08
68280005	DESMOPRESSIN	1	0.01	1	0.08
68320000	PROGESTOGENS	2	0.03	2	0.16
68320000	PROGESTOGENS	2	0.03	2	0.16
68320002	MEDROXYPROGESTERONE	2	0.02	2	0.16
68360000	THYROID & THYROID ANTAGONISTS	239	3.00	237	18.50
68360000	THYROID & THYROID ANTAGONISTS	7	0.09	7	0.55
68360083	CALCITONIN SALMON	7	0.09	7	0.55
68360400	THYROID AGENTS	223	2.80	222	17.33
68360404	THYROID	12	0.15	12	0.94
68360406	LEVOTHYROXINE	211	2.64	210	16.39
68360800	ANTITHYROID AGENTS	9	0.11	9	0.70
68360802	METHIMAZOLE	5	0.06	5	0.39
68360805	PROPYLTHIOURACIL	4	0.05	4	0.31
72000000	ANESTHETICS (LOCAL)	4	0.05	4	0.31
72000000	ANESTHETICS (LOCAL)	4	0.05	4	0.31
72000000	ANESTHETICS (LOCAL)	4	0.05	4	0.31
72000004	LIDOCAINE	4	0.05	4	0.31
82000000	BIOLOGICALS-OTHER	2	0.02	2	0.16
82000000	BIOLOGICALS-OTHER	2	0.03	2	0.16
82000400	MONOCLONAL ANTIBODIES	2	0.03	2	0.16
82000447	TRASTUZUMAB	1	0.01	1	0.08
82000474	ADALIMUMAB	1	0.01	1	0.08
84000000	SKIN & MUCOUS MEMBRANE AGENTS	88	1.10	67	5.23
84040000	ANTIINFECTIVES (TOP)	6	0.08	5	0.39
84040800	ANTIFUNGALS (TOPICAL)	1	0.01	1	0.08
84040819	BUTENAFINE	1	0.01	1	0.08
84041600	ANTIINFECTIVES (TOP)-OTHER	5	0.06	4	0.31
84041607	BENZALKONIUM CHLORIDE	3	0.04	2	0.16
84041633	SILVER SULFADIAZINE	1	0.01	1	0.08
84041673	PYRITHIONE	1	0.01	1	0.08
84060000	ANTIINFLAMMATORY AGENTS (TOP)	37	0.46	35	2.73

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
84060000	ANTIINFLAMMATORY AGENTS (TOP)	37	0.46	35	2.73
84060006	CLOBETASOL PROPIONATE	4	0.05	4	0.31
84060017	DESOXIMETASONE	4	0.05	4	0.31
84060022	BUDESONIDE	12	0.15	11	0.86
84060076	MOMETASONE	13	0.16	13	1.01
84060078	BECLOMETHASONE	1	0.01	1	0.08
84060086	FLUOCINONIDE	1	0.01	1	0.08
84060090	FLUOROMETHOLONE	2	0.02	2	0.16
84080000	ANESTHETICS & ANTIPRURIT (TOP)	12	0.15	8	0.62
84080000	ANESTHETICS & ANTIPRURIT (TOP)	12	0.15	8	0.62
84080001	PHENAZOPYRIDINE	1	0.01	1	0.08
84080003	CAMPHOR	3	0.04	2	0.16
84080011	MENTHOL	3	0.04	2	0.16
84080013	CAPSAICIN	2	0.02	2	0.16
84080097	PRAMOXINE	3	0.04	3	0.23
84120000	ASTRINGENTS	5	0.06	5	0.39
84120000	ASTRINGENTS	5	0.06	5	0.39
84120008	ALUMINUM CHLOROHYDREX	5	0.06	5	0.39
84240000	EMOLLIENTS, DEMULC & PROTECT	25	0.31	23	1.80
84240000	EMOLLIENTS, DEMULC & PROTECT	1	0.01	1	0.08
84240000	EMOLLIENTS, DEMULC & PROTECT	1	0.01	1	0.08
84240400	BASIC LOTIONS & LINIMENTS	1	0.01	1	0.08
84240400	BASIC LOTIONS & LINIMENTS	1	0.01	1	0.08
84241200	PROTECTANTS & BASIC LINIMENTS	23	0.29	22	1.72
84241206	LANOLIN	1	0.01	1	0.08
84241212	PETROLATUM	2	0.02	2	0.16
84241213	POLYETHYLENE GLYCOL	20	0.25	20	1.56
84280000	KERATOLYTIC AGENTS	1	0.01	1	0.08
84280000	KERATOLYTIC AGENTS	1	0.01	1	0.08
84280004	TRETINOIN	1	0.01	1	0.08
84360000	SKIN & MUCOUS MEMBRANE-OTHER	2	0.03	2	0.16
84360000	SKIN & MUCOUS MEMBRANE-OTHER	2	0.03	2	0.16
84360052	AMMONIUM LACTATE	2	0.02	2	0.16
86000000	SPASMOLYTIC AGENTS	72	0.90	71	5.54
86000000	SPASMOLYTIC AGENTS	72	0.90	71	5.54
86000000	SPASMOLYTIC AGENTS	72	0.90	71	5.54
86000004	OXYBUTYNIN	36	0.45	36	2.81
86000009	THEOPHYLLINE	5	0.06	5	0.39
86000047	TOLTERODINE	31	0.39	31	2.42
88000000	VITAMINS	220	2.75	143	11.16
88040000	VITAMIN A DERIVATIVES	3	0.04	3	0.23
88040000	VITAMIN A DERIVATIVES	3	0.04	3	0.23

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
88040005	LYCOPENE	1	0.01	1	0.08
88040006	XANTHOPHYLL	1	0.01	1	0.08
88040098	VITAMIN A	1	0.01	1	0.08
88080000	VITAMIN B COMPLEX	126	1.58	77	6.01
88080000	VITAMIN B COMPLEX	126	1.58	77	6.01
88080000	VITAMIN B COMPLEX	1	0.01	1	0.08
88080002	CYANOCOBALAMIN	37	0.46	35	2.73
88080003	FOLIC ACID	45	0.56	43	3.36
88080004	NIACIN	15	0.19	15	1.17
88080006	PYRIDOXINE	20	0.25	19	1.48
88080007	RIBOFLAVIN	5	0.06	5	0.39
88080009	THIAMINE	2	0.02	2	0.16
88080092	INOSITOL	1	0.01	1	0.08
88120000	VITAMIN C DERIVATIVES	7	0.09	7	0.55
88120000	VITAMIN C DERIVATIVES	7	0.09	7	0.55
88120002	ASCORBIC ACID	7	0.09	7	0.55
88160000	VITAMIN D & DERIVATIVES	47	0.59	43	3.36
88160000	VITAMIN D & DERIVATIVES	47	0.59	43	3.36
88160000	VITAMIN D & DERIVATIVES	37	0.46	36	2.81
88160006	PARICALCITOL	1	0.01	1	0.08
88160007	DOXERCALCIFEROL	2	0.02	2	0.16
88160095	CHOLECALCIFEROL	4	0.05	4	0.31
88160096	CALCITRIOL	3	0.04	3	0.23
88200000	VITAMIN E & DERIVATIVES	2	0.03	2	0.16
88200000	VITAMIN E & DERIVATIVES	2	0.03	2	0.16
88200000	VITAMIN E & DERIVATIVES	2	0.02	2	0.16
88240000	VITAMIN K & DERIVATIVES	1	0.01	1	0.08
88240000	VITAMIN K & DERIVATIVES	1	0.01	1	0.08
88240000	VITAMIN K & DERIVATIVES	1	0.01	1	0.08
88280000	MULTIVITAMIN PREPARATIONS	34	0.43	34	2.65
88280000	MULTIVITAMIN PREPARATIONS	34	0.43	34	2.65
88280000	MULTIVITAMIN PREPARATIONS	34	0.42	34	2.65
92000000	UNCLASSIFIED THERAPEUTIC AGTS	212	2.65	202	15.77
92000000	UNCLASSIFIED THERAPEUTIC AGTS	36	0.45	35	2.73
92000000	UNCLASSIFIED THERAPEUTIC AGTS	36	0.45	35	2.73
92000015	SEVELAMER	2	0.02	2	0.16
92000018	MELATONIN	3	0.04	3	0.23
92000134	CYCLOSPORINE	2	0.02	2	0.16
92000170	METHYLENE BLUE	1	0.01	1	0.08
92000210	HOMEOPATHIC PREPARATIONS	1	0.01	1	0.08
92000239	VARENICLINE	1	0.01	1	0.08
92000304	RIMONABANT	1	0.01	1	0.08

IDIS Code	Description	# of Times Med Taken	% Tot Meds Taken	# of Ppts	% Tot Ppts
92000409	CINACALCET	1	0.01	1	0.08
92010101	MONTELUKAST	18	0.22	18	1.41
92010105	ZAFIRLUKAST	2	0.02	2	0.16
92200099	YOHIMBINE	1	0.01	1	0.08
92300030	THIOCTIC ACID	1	0.01	1	0.08
92354062	CITRIC ACID	1	0.01	1	0.08
92354072	LACTIC ACID	1	0.01	1	0.08
92510000	HERBAL MEDICINES	4	0.05	4	0.31
92510000	HERBAL MEDICINES	4	0.05	4	0.31
92510000	HERBAL MEDICINES	1	0.01	1	0.08
92510020	SAW PALMETTO	1	0.01	1	0.08
92510034	GINKGO	1	0.01	1	0.08
92510060	SOY	1	0.01	1	0.08
92520000	NATURAL PRODUCTS-OTHER	2	0.03	2	0.16
92520000	NATURAL PRODUCTS-OTHER	2	0.03	2	0.16
92520011	GLUCOSAMINE	2	0.02	2	0.16
92600100	BISPHOSPHONATES	170	2.13	170	13.27
92600100	BISPHOSPHONATES	170	2.13	170	13.27
92600101	ALENDRONATE	119	1.49	119	9.29
92600105	IBANDRONATE	11	0.14	11	0.86
92600109	RISEDRONATE	39	0.49	39	3.04
92600111	ZOLEDRONATE	1	0.01	1	0.08
96000000	PHARMACEUTICAL AIDS	13	0.16	13	1.01
96000000	PHARMACEUTICAL AIDS	13	0.16	13	1.01
96000000	PHARMACEUTICAL AIDS	1	0.01	1	0.08
96000016	ALGINIC ACID	1	0.01	1	0.08
96005000	PHARM AIDS-SUSP/EMULS/SURFACT	12	0.15	12	0.94
96005002	CARBOMERS	1	0.01	1	0.08
96005003	CARBOXYMETHYLCELLULOSE	1	0.01	1	0.08
96005005	HYPROMELLOSE	8	0.10	8	0.62
96005006	METHYLCELLULOSE	1	0.01	1	0.08
96005080	SORBITAN COMPOUNDS	1	0.01	1	0.08
99990089	/BOOK: BIOPHARMACEUTICS	15	0.19	15	1.17
99990089	/BOOK: BIOPHARMACEUTICS	15	0.19	15	1.17
99999999	UNCODABLE INGREDIENT	15	0.19	15	1.17
99999999	UNCODABLE INGREDIENT	15	0.19	15	1.17

Appendix III
MEDICATION USE VARIABLES

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11ACEINH	Y11: ACE inhibitors	Indicator variable for ACE inhibitor in Y11MIFCOD based on IDIS code	ACE inhibitors (24080200 ≤ INGCODE ≤ 24080299)	= .A if no drug information available	0=No 1=Yes
Y11ALPHA BLOCK **New variable (replaces not quite equivalent YxALPHBK)**	Y11: Alpha-adrenergic blockers (hypertension)	Indicator variable for alpha-adrenergic blocker in Y11MIFCOD based on IDIS code, in males, excludes alpha blockers that may be used for BPH (see ALPHAMALE, below)	Alpha-adrenergic blockers (12160400 ≤ INGCODE ≤ 12160499) Exclude INGCODEs 12160401, 12160404, and 12160419 if gender=1 **(see Y11ALPHAMALE)**. Exclude tamsulosin (INGCODE=12160411) entirely.	= .A if no drug information available Investigators must decide for themselves whether to include alpha blockers in males that may have been prescribed for BPH (no reason for use collected starting Year 10)	0=No 1=Yes
Y11ALPHA MALE **New variable to be used to supplement Y11ALPHA BLOCK or Y11BPHDRG as analyst desires.**	Y11: Alpha-adrenergic blockers in males that may be prescribed **for either BPH or hypertension** (reason for use unknown)	Indicator variable for alpha-adrenergic blocker in Y11MIFCOD based on IDIS code, in males only, where medication commonly prescribed for either BPH, hypertension, or both.	Terazosin, Doxazosin, and Prazosin INGCODE in (12160401, 12160404, 12160419) AND GENDER=1	= .A if no drug information available OR if participant is female	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11AMILOR	Y11:Diuretic: amiloride	Indicator variable for amiloride in Y11MIFCOD based on IDIS code	Amiloride INGCODE=40280062	= .A if no drug information available	0=No 1=Yes
Y11AMIODR	Y11: Antiar-rhythmic: amiodarone	Indicator variable for amiodarone in Y11MIFCOD based on IDIS code	Amiodarone INGCODE=24040220	= .A if no drug information available	0=No 1=Yes
Y11ANDEPO	Y11: Miscellaneous antidepressants	Indicator variable for miscellaneous antidepressant med in Y11MIFCOD based on IDIS code	Trazodone, Bupropion, Venlafaxine, Nefaxodone INGCODE in (28160415,28160434,28160458, 28160486)	= .A if no drug information available	0=No 1=Yes
Y11ANGTN2	Y11: Angiotensin II hypotens agnts	Indicator variable for angiotensin II hypotensive agent in Y11MIFCOD based on IDIS code	Angiotensin II hypotensive agents (24080400 ≤ INGCODE ≤ 24080413)	= .A if no drug information available	0=No 1=Yes
Y11ANLEUC	Y11: Spasmolytics: Antileucotrienes	Indicator variable for antileucotriene spasmolytic in Y11MIFCOD based on IDIS code	=1 if 92010101 ≤ INGCODE ≤ 92010206 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y11ANTANG	Y11:CV Drug #1:Antianginal	Indicator variable for antianginal meds in Y11MIFCOD based on IDIS code	=1 if Y11BETABK=1 or Y11NITRAT=1 or Y11CACHBK=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11ANTARR	Y11:CV Drug #7: Antiar-rhythmic	Indicator variable for antiarrhythmic meds in Y11MIFCOD based on IDIS code	=1 if Y11ARHYT1=1 or Y11CARGLY=1 or Y11DILTZM=1 or Y11BETABK=1 or Y11AMIODR=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y11ANTHYR	Y11: Thyroid antagonist	Indicator variable for thyroid antagonist in Y11MIFCOD based on IDIS code	=1 if 68360800 ≤ INGCODE ≤ 68360805 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y11ANTINF	Y11: Anti-inflammatory	Indicator variable for anti-inflammatory meds in Y11MIFCOD based on IDIS code	=1 if Cox II inhibitor (28080601 ≤ INGCODE ≤ 28080699) or Y11SALIC=1 or Y11NSAID=1 or Y11ORSTER=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y11ANTLIP	Y11: CV drug #2: antilipemic (inc statins)	Indicator variable for any antilipemic med in Y11MIFCOD based on IDIS code	=1 if (24060000 ≤ INGCODE ≤ 24060409) or INGCODE = 88080004; =0 otherwise Note: includes statins and high dose niacin	= .A if no drug information available	0=No 1=Yes
Y11ANTPLT	Y11: CV drug #4: antiplatelet	Indicator variable for any antiplatelet medication in Y11MIFCOD based on IDIS code	=1 if Y11ASAPLT=1 or Y11OTHPLT=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y11ARHYT1	Y11: Type I antiarrhythmic medication	Indicator variable for type I antiarrhythmic in Y11MIFCOD based on IDIS code	=1 if INGCODE in (24040006, 24040007,24040008,24040021, 24040023,24040024,24040028, 24040034,24040035, 24040071, 24040097,24040091,24040099) =0 otherwise	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11ASAPLT	Y11: Antiplatelet: ASA	Indicator variable for aspirin or antiplatelet med in Y11MIFCOD based on IDIS code	Platelet aggregate inhibitors , including aspirin (20120600 ≤ INGCODE ≤ 20120672) Aspirin was in this range, now is 28080751, both codes included. **Note : does not include ticlopidine (included under Y11OTHPLT)**	= .A if no drug information available	0=No 1=Yes
Y11BETABK	Y11: Beta-adrenergic blockers	Indicator variable for beta-adrenergic blocker in Y11MIFCOD based on IDIS code	Beta-adrenergic blockers (12160100 ≤ INGCODE ≤ 12160199) and not ophthalmic (MIFFRMCODE ≠ 4) and DRUGNAME ≠ 'Timoptic'	= .A if no drug information available	0=No 1=Yes
Y11BPHDRG **New variable (replaces not quite equivalent (YxPRSDRG)**	Y11:Any drugs used for prostate disease	Indicator variable for prostate med in Y11MIFCOD based on IDIS code	Megestrol, Leuprolide, Finasteride (new #10120081), Tamsulosin, Cyproterone, Flutamide, Chlorotrianisene, Diethylstilbestrol, Nafarelin, Buserelin, Goserelin INGCODE in (10100047, 10120054,10120100,68080403**,** 68080404,68160001,68160004, 68180009,12160411,68180013, 68180014) and GENDER=1	= .A if no drug information available Note: includes only GENDER =2 **Excludes INGCODE in (12160401, 12160404, 12160419). Investigator may wish to consider also including ppts with Y11ALPHAMALE=1 .**	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11BRONCH	Y11: Bronchodila-tors	Indicator variable for bronchodilator in Y11MIFCOD based on IDIS code	Ipratropium Bromide, Pirbuterol, Salmeterol, Albuterol, Formoterol, Terbutaline, Bitolterol, Levalbuterol INGCODE in (12080028, 12120029,12120030, 12120046, 12120047, 12120053,12120066, 12120094) excluding ATROVENT NASAL SPRAY	= .A if no drug information available	0=No 1=Yes
Y11CACHBK	Y11: Calcium channel blockers	Indicator variable for calcium channel blocker in Y11MIFCOD based on IDIS code	Calcium channel blockers ((24120400 ≤ INGCODE ≤ 24120450) <u>and</u> INGCODE ≠ 24120402 (Nimodipine) or 24120412 (Flunarizine)	= .A if no drug information available	0=No 1=Yes
Y11CALC SUPP **New variable (replaces not quite equivalent (YxCALCM)**	Y11: Calcium supplement	Indicator variable for calcium supplement in Y11MIFCOD based on IDIS code	=1 if (40121200 ≤ INGCODE ≤ 40121299) or (INGCODE in (56040004,56040085) <u>and</u> MIFFREQ=2) (used regularly) =0 otherwise	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11CANDRG	Y11:Any anti-cancer drugs	Indicator variable for anti-cancer med in Y11MIFCOD based on IDIS code	Chlorambucil, Capecetabine, Fluorouracil, Megestrol, Tamoxifen, Hydroxyurea, Letrozole, Anastrozole, Goserelin, Diethylstilbestrol, Mitoxantrone [INGCODE in (10040402, 10080418, 10080425, 10100047, 10100085, 10120019, 10120114, 10120127, 68180014, 68160004, 10030047] or male (GENDER=1) and Leuprolide, Flutamide, Nilutamide, Bicalutamide, Estramustine [INGCODE in (10120054,68080404,68080406,68080407, 10040404)] excludes estrogen	= .A if no drug information available	0=No 1=Yes
Y11CARGLY	Y11:Antiar-rhythmic: Cardiac glycosides	Indicator variable for cardiac glycoside in Y11MIFCOD based on IDIS code	Cardiac glycosides (24040100 ≤ INGCODE ≤ 24040199)	= .A if no drug information available	0=No 1=Yes
Y11CHFDIU	Y11: CV drug #6: diuretics for CHF	Indicator variable for diuretic for CHF in Y11MIFCOD based on IDIS code	=1 if Y11LOOPDI=1 or Y11KSPARE=1 or Y11AMILOR=1 or Y11INDAPA=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y11CHFVAS	Y11: CV drug #5: vasodilator or ACE-I for CHF	Indicator variable for vasodilator or ACE inhibitor for CHF in Y11MIFCOD based on IDIS code	=1 if Y11HYDRLZ=1 or Y11ACEINH=1 or Y11ANGTN2=1 =0 otherwise	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11DIBDRG	Y11:Any diabetes med (hypoglycem/ insulin)	Indicator variable for diabetes med in Y11MIFCOD based on IDIS code	Insulins and Antidiabetic Agents (68200400 ≤ INGCODE ≤ 68200875) Note: includes insulin	= .A if no drug information available	0=No 1=Yes
Y11DILTZM	Y11:Antiar-rhythmic: diltiazem	Indicator variable for diltiazem in Y11MIFCOD based on IDIS code	Diltiazem INGCODE=24120410	= .A if no drug information available	0=No 1=Yes
Y11DIURO	Y11: Miscellaneous diuretics	Indicator variable for miscellaneous diuretic in Y11MIFCOD based on IDIS code	Diuretics, excluding: SC-16102, Tizolemide, A-56234, Diapamide, Benzamil, Ibopamine, Lyophilized urea, Sodium ethacrynate, Pamabrom, Amisometradine, Ammonium Citrate, Chlorexolone, Theobromine, MK-463 (40280010 ≤ INGCODE ≤ 40280062) and not (INCODE in 40280020,40280021))	= .A if no drug information available	0=No 1=Yes
Y11HBPDRG ***NOTE: does not include alphablockers that may be used for HBP or BPH in males**	Y11: Any drug likely prescribed for hypertension (except some alpha blockers*****)	Indicator variable for any one of: beta-blocker, central hypotensive, ACE inhibitor, angiotensin II, hydralizide, calcium channel blocker, thiazide or loop diuretic	=1 if any of the following=1: Y11BETABK, Y11ALPHABLOCK*, Y11HYPOTN, Y11ACEINH, Y11ANGTN2, Y11HYDRLZ, Y11CACHBK, Y11DIURO, Y11THIAZ, Y11LOOPDI	= .A if no drug information available	0=No 1=Yes
Y11HYDRLZ	Y11: Vasodilator: Hydralazine	Indicator variable for hydralazine in Y11MIFCOD based on IDIS code	Hydralazine INGCODE=24120094	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11HYPGLY	Y11:Oral hypoglycemics	Indicator for oral hypoglycemics in Y11MIFCOD based on IDIS code	Miglitol (INGCODE=68200006) or Sitagliptin (INGCODE=68200002) oral hypoglycemics in (68200400≤INGCODE≤ 24060700)	=.A if no drug information available	0=No 1=Yes
Y11HYPOTN	Y11: Central hypotensives	Indicator variable for central hypotensive agent in Y11MIFCOD based on IDIS code	Hypotensive agents (24080000 ≤ INGCODE ≤ 24080099) and not topical or ophthalmic (MIFFRMCODE not in (3,4)) ; include 'Clonidine Patch', 'Catapress-TTS' ; exclude 'Minoxidil for Men'	= .A if no drug information available	0=No 1=Yes
Y11INCORT	Y11: Inhaled steroids	Indicator variable for steroid inhaled via mouth in Y11MIFCOD based on IDIS code	Beclomethasone, Budesonide, Dexamethasone, Mometasone, Triamcinolone, Fluticasone, Flunisolide MIFFRMCOD =6 and INGCODE in (84060078, 84060022, 68040008, 68040094, 52080025) excluding lotions and nasal preparations	= .A if no drug information available	0=No 1=Yes
Y11INDAPA	Y11: Diuretic: Indapamide	Indicator variable for indapamide in Y11MIFCOD based on IDIS code	Indapamide INGCODE=40280025	= .A if no drug information available	0=No 1=Yes
Y11INSULN	Y11:Insulins	Indicator variable for insulin in Y11MIFCOD based on IDIS code	Insulins (68200800 ≤ INGCODE ≤ 68200876)	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11KSPARE	Y11: K-sparing diuretics	Indicator variable for potassium-sparing diuretic in Y11MIFCOD based on IDIS code;	Potassium-sparing diuretic (INGCODE =40280013, 40280016, 40280050, or 40280062)	= .A if no drug information available	0=No 1=Yes
Y11LOOPDI	Y11: Loop diuretics	Indicator variable for loop diuretic in Y11MIFCOD based on IDIS code	Loop diuretics (40280400 ≤ INGCODE ≤ 40280407)	= .A if no drug information available	0=No 1=Yes
Y11MAOINH	Y11: Anti-depressants: MAO inhibitors	Indicator variable for MAO inhibitor antidepressant in Y11MIFCOD based on IDIS code	MAO inhibitor antidepressant (28160500 ≤ INGCODE ≤ 28160599)	= .A if no drug information available	0=No 1=Yes
Y11MASTCL	Y11: Mast cell stabilizers	Indicator variable for mast cell stabil-izer in Y11MIFCOD based on IDIS code	Nedocromil, Cromolyn INGCODE in (92000192,92000020) and MIFNAME ≠ 'Nasalcrom'	= .A if no drug information available	0=No 1=Yes
Y11NITRAT	Y11: Nitrates	Indicator variable for nitrate medications in Y11MIFCOD based on IDIS code	Nitrate Vasodilators (24120200 ≤ INGCODE ≤ 24120299)	= .A if no drug information available	0=No 1=Yes
Y11NSAID	Y11: NSAID	Indicator variable for non-steroidal anti-inflammatory medications in Y11MIFCOD based on IDIS code	Non-steroidal anti-inflammatory (28080400≤ INGCODE≤ 28080699) ; this includes COX-2 inhibitors	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11OREST	Y11: Oral estrogen	Indicator variable for oral estrogen medications in Y11MIFCOD based on IDIS code	Oral estrogen (68160000≤ INGCODE≤ 68160399) and MIFFRMCODE in (1,2)	= .A if no drug information available	0=No 1=Yes
Y11ORSTER	Y11: Oral steroid	Indicator variable for oral steroid medications in Y11MIFCOD based on IDIS code	INGCODE in 68040001 (cortisone), 68040003 (dexamethasone), 68040004 (fludrocortisone), 68040005 (hydrocortisone), 68040006 (methylprednisolone), 68040007 (prednisone), 68040008 (triamcinolone), 68040011 (betamethasone), 68040092 (prednisolone)) and MIFFRMCODE in (1,2)	= .A if no drug information available	0=No 1=Yes
Y11OSTDRG	Y11:Any osteoporosis drugs	Indicator variable for osteoporosis med in Y11MIFCOD based on IDIS code	Fluorides (40120800 ≤ INGCODE ≤ 40120806), Calcitonins (68360083 ≤ INGCODE ≤ 68360088), all bisphosphonates (INGCODE= 92600100-199), raloxifene INGCODE=68160408), teriparatide (68240001)	= .A if no drug information available	0=No 1=Yes
Y11OTHPLT	Y11: Antiplatelet: Ticlopidine, Anagrelide, Dipyridamole	Indicator variable for other antiplatelet med in Y11MIFCOD based on IDIS code	Ticlopidine, Anagrelide, Dipyridamole: INGCODE in (20120408, 20120412, 24120091)	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11PULDRG	Y11: Any pulmonary medication (not oral steriods)	Indicator variable for pulmonary med in Y11MIFCOD based on IDIS code	=1 if any of the following = 1: Y11BRONCH, Y11INCORT, Y11THEOPH, Y11ANLEUC, Y11MASTCL Note: excludes oral steroids	= .A if no drug information available	0=No 1=Yes
Y11PULSTR	Y11: Oral steroid (pulmonary)	Indicator for oral steroid (pulmonary) in Y11MIFCOD based on IDIS code	=1 if INGCODE in (68040006,68040007,68040092) and MIFFRMCODE in (1,2,3) =0 otherwise	= .A if no drug information available	0=No 1=Yes
Y11RXTOT	Y11: Total number of Rx meds	Count of prescrip-tion medications reported by the participant	Y11MIF is sorted by HABCID and DRCOD and only the last of each ID/DRCOD combination is kept. The variable is incremented by 1 each time MIFRX=1	= .A if no drug information available	Number
Y11SALIC	Y11:Salicylate	Indicator variable for oral salicylates in Y11MIFCOD based on IDIS code	Oral salicylates (28080750≤ INGCODE≤28080799) and MIFFRMCOD in (1,2)	= .A if no drug information available	0=No 1=Yes
Y11SSRI	Y11: Anti-depressants: SSRI	Indicator variable for SSRI antidepressant med in Y11MIFCOD based on IDIS code	SSRI antidepressant (28160700 ≤ INGCODE ≤ 28160712)	= .A if no drug information available	0=No 1=Yes
Y11STATIN	Y11: Antilipemic: HMG CoA Reductase inhib. (Statins)	Indicator variable for statin antilipemic in Y11MIFCOD based on IDIS code	Antilipemic Agents (24060000 ≤ INGCODE ≤ 24060299); includes Statins, excludes Fibric Acids	= .A if no drug information available	0=No 1=Yes

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11THEOPH	Y11: Spasmolytics: Theophylline and others	Indicator variable for theophylline or related med in Y11MIFCOD based on IDIS code	Theophylline, dyphylline, oxytriphylline, aminophylline INGCODE in (86000009, 86000088, 86000084, 86000094)	= .A if no drug information available	0=No 1=Yes
Y11THIAZ	Y11: Thiazide diuretics	Indicator variable for thiazide diuretic in Y11MIFCOD based on IDIS code	Thiazide diuretics (40280100 ≤ INGCODE ≤ 40280199), **does <u>not</u> include indapamide (see Y11INDAPA)**	= .A if no drug information available	0=No 1=Yes
Y11THYR	Y11: Thyroid agonist	Indicator variable for thyroid agonists in Y11MIFCOD based on IDIS code	Thyroid agonists (68360400≤INGCODE≤ 68360499)	= .A if no drug information available	0=No 1=Yes
Y11TRICYC	Y11: Anti-depressants: Tri/tetracyclics	Indicator variable for tri/tetracyclic antidepressant med in Y11MIFCOD based on IDIS code	Tri/tetracyclic antidepressant (28160600 ≤ INGCODE ≤ 28160697) and MIFFRMCODE≠ 3 (topical)	= .A if no drug information available	0=No 1=Yes
Y11VITD	Y11: Vitamin D Supplement	Indicator variable for calcium supplement in Y11MIFCOD based on IDIS code	Vitamin D (88160000≤INGCODE < 88160100)	= .A if no drug information available	0=No 1=Yes

Documentation for Year 11 Calculated Variable Dataset

YEAR 11 CALCULATED VARIABLE DATASET (Y11Calc).....58

Appendix I Calculated Variable List

Appendix II Self-Reported Function

Appendix III Smoking Habits

Appendix IV Physical Activity and Exercise

Appendix V Alcoholic Beverages

Appendix VI Anthropometric Measures

Appendix VII Blood Pressure

Appendix VIII Performance Measures

Appendix IX Cognitive Function Scores

Appendix X CESD

YEAR 11 CALCULATED VARIABLE DATASET (Y11Calc)

1. General description

The Y11Calc contains 59 variables derived (calculated) as described below. The documentation is grouped by the type of data from which the variables are calculated (self-reported function, smoking habits, etc.), and the variables are positioned in the dataset in the same groupings.

There are 3075 observations in the Y11Calc file.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the "Proc Contents for All Datasets" link (search under Y11Calc) and in Appendix I. NOTE: SOME CALCULATED VARIABLES USE THE SAME VARIABLE NAMES EVERY YEAR. THE ANALYST IS REMINDED TO RENAME VARIABLES BEFORE MERGING WITH OTHER YEARS AS NECESSARY.

3. Dataset structure and contents

The Y11Calc file contains a single observation per participant.

Key variables:

HABCID	Health ABC Enrollment ID# without the 2-letter prefix
GENDER	Gender (1=Male; 2=Female)*
RACE	Race (1=White; 2=Black)*
RACEGEN	Race-gender group (1=White male, 2=White female, 3=Black male, 4=Black female)*
SITE	Clinic Site (1=Memphis, 2=Pittsburgh)*

4. Condition of data

a. Strengths and weaknesses of dataset items: When a calculated variable includes imputations for missing variables, the method of imputation is **bolded** in the documentation.
There were no major logic changes used to derive calculated variables for year 11 as compared with previous years.

The weight variable Y11WTK which reports participants' weight in kilograms, regardless of whether it was measured in pounds (home visit) or kilograms, has been added for easy comparison to other datasets.

Year 11 BMI was calculated from year 11 weight and the last recorded height, going back to year 1, if necessary. Calculated versions of year 11 height and weight are included in the dataset but were derived only from reported year 11 data. Thus there are some patients who have a year 11 BMI but do not have a year 11 height measurement.

* Must link to Health ABC participant history file (PH) to add this variable.

The performance calculated variables (see Appendix VIII) have been thoroughly examined and corrected. The investigator who designed these variables created them to mimic the way things were done in the EPESE study, so certain recodes were made when calculating them. Most importantly, in EPESE, the full-tandem stand was not supposed to be administered unless the semi-tandem stand was held for 10 seconds. In Health ABC the full-tandem stand was supposed to be administered if the ST stand has held for least 1 second. Similarly, in EPESE, the one-leg stand was not administered if the full-tandem stand was not held for the full 30 seconds, while in Health ABC this stand was administered if the participant held the full-tandem for at least 1 second. In addition, balance walks variables originally set to 0 when refused or entirely missing are now set to missing. These corrections resulted in a number of changes to these variables, and analysts are advised to rerun any analyses pertaining to these variables using the latest dataset. The fourteen variables that involve the 6-meter walk were accidentally omitted in earlier releases, but now have been added. As in previous years, three variables have been renamed. SIXMPACE has been renamed Y11UWPACE, SIXRATIO has been renamed Y11UWRATIO, and UWSCORE has been renamed Y11UWSCR, and these variables have been broadened to include performance on the 3- or 4-meter walk administered in the home in place of the 6-meter walk administered in the clinic. Since each of these variables is standardized to the distance walked, their interpretation should be equivalent. The variables DID6MUW and SIXMWTM, which are not standardized to distance walked, have not been renamed or expanded.

For the CES_D score (full 20-item scale), a maximum of 4 missing or refused items are imputed from the non-missing values. For CES_D1 (the short-form 10-item scale), a maximum of 1 missing value was previously imputed. After consultation with the prime mover, this maximum was changed to 2 for the CES_D10, causing two participants to have a CES_D10 score who previously did not.

After the first release, it was recognized that examiners often put the same number in both the "number completed" and "number incorrect" boxes for the Digit-Symbol Substitution test. Therefore, wherever these values were the same, we have gone back and asked the clinics to check the scoring of these tests. Thus, ten participants have non-zero values for DSS who previously did not, and the same ten have corrected values of DSS111 (difference between Year 1 and Year 11 DSS scores).

5. Dataset index formulation and key variable mapping

The Y11Calc file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

Appendix I
CALCULATED VARIABLE LIST

Variable	Variable Description	Grouping
EASE1F	Ease climbing 1 flight	Self-reported function
EASE2F	Ease climbing 2 flights	Self-reported function
CSAINDEX	Climbing stairs ability index	Self-reported function
EASE10P	Ease lift/carry 10 lbs	Self-reported function
EASE20P	Ease lift/carry 20 lbs	Self-reported function
LCAINDEX	Lift/carry ability index	Self-reported function
EASEUP	Ease standing from chair without using arms	Self-reported function
SMK11	Smoking status at Year 11 visit	Smoking Habits
Y11MCKKWK	Kcal/kg/week doing major chores	Physical Activity
Y11FSKKWK	Kcal/kg/week climbing stairs	Physical Activity
Y11TWKKWK	Kcal/kg/week total walking	Physical Activity
WALKTIME	Minutes walking/week	Physical Activity
WALKCAT	Minutes walking/week category	Physical Activity
BKTWTIME	Minutes walking briskly/week	Physical Activity
BRISK90	Walks briskly >= 90 min/week	Physical Activity
BRISK180	Walks briskly >= 180 min/week	Physical Activity
WSKKWK	Kcal/kg/week - walking + stairs	Physical Activity
DRINKER11	Drinking history at year 11	Alcoholic Beverages
CURDRNK11	Current drinking consumption at year 11	Alcoholic Beverages
Y11SH	Average year 11 standing height	Anthropometric Measures
Y11WTK	Weight in KG	Anthropometric Measures
Y11BMI	BMI, kg/m2	Anthropometric Measures
Y11BMICAT	Bmi category	Anthropometric Measures
SYSBP	Avg sitting systolic BP, mm Hg	Blood Pressure
DIABP	Avg sitting diastolic BP, mm Hg	Blood Pressure
AAIR	Ankle-arm index, rt leg	Blood Pressure
AAIL	Ankle-arm index, lt leg	Blood Pressure
MINAAI	Lowest ankle-arm index	Blood Pressure
LOWAAI	Lower extr arterial dz index	Blood Pressure
ABLE5CS	Did 5 chair stands (yes=1)	Performance Measures
CAT5CS	Epese score for chair stands	Performance Measures
CHR5PACE	# Chair stands per second	Performance Measures
CSRATIO	Chair stands performance ratio	Performance Measures

Variable	Variable Description	Grouping
FSBTIME	Standing balance test time (0-90)	Performance Measures
FSBRATIO	Standing balance time ratio	Performance Measures
SBSCORE	Epese score for standing balance	Performance Measures
DID6MUW	Did 6m usual walk (yes=1)	Performance Measures
SIXMWTM	Time to walk 6m	Performance Measures
Y11UWPACE	Walking speed (m/sec) over 3,4, or 6m	Performance Measures
Y11UWRATIO	Usual walk performance ratio	Performance Measures
DID6MNW	Did 6m narrow walk (yes=1)	Performance Measures
NWTIME	Time to walk a 20cm wide 6m course	Performance Measures
NWPACE	Walking speed for narrow walk 6m	Performance Measures
NWSCORE	Epese category for narrow walk	Performance Measures
NWRATIO	Narrow walk performance ratio	Performance Measures
NWSCOREQ	% diff between narrow & usual walks	Performance Measures
EPESEPPB	EPESE performance battery score 0-12	Performance Measures
HABCPPB	Health ABC performance score 0-4	Performance Measures
PPB12CAT	Categorical scoring of HABCPPB 0-12	Performance Measures
MMMFLAG	Teng 3MS prorated or set to .E	Cognitive Function
MMMSCORE	Teng 3MS score	Cognitive Function
DSS	Year 11 - Digit symbol score	Cognitive Function
DSS111	Y1 minus y11 change: Digit symbol score	Cognitive Function
CES_D	CES-D score	Depression Scales
CES_D10	CES-D 10 short form score	Depression Scales

Appendix II
Self-Reported Function Calculated Variables

Investigator Name: Eleanor Simonsick

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels

EASEQM	Ease walking 1/4 mile	Recode of Y11DWQMEZ where 3 is easiest; imputations applied for missing Y11DWQMEZ	If Y11DWQMYN in (0,7,8) then EASEQM=7-Y11DWQMEZ
			If Y11DWQMYN=1 then EASEQM=4-Y11DWQMDF
				IF Y11DWQMYN=9 AND (Y11MNRS>0 OR Y11MNRS4 IN(1,2)) THEN Y11DWQMYN=1;
				IF Y11DWQMEZ=8 and Y11DWQMYN ne 8 THEN Y11DWQMEZ=2;
				IF Y11DWQMDF=8 and Y11DWQMYN ne 8 THEN Y11DWQMDF=2;
				IF (Y11DWQMYN=0 AND Y11DWQMEZ<0) THEN EASEQM=7-Y11DW1MEZ;
				IF (Y11DWQMYN=0 AND Y11DWQMEZ<0) AND Y11DW1MEZ<0 AND (Y11DW1MYN=1 OR Y11DW1MYN=8 OR Y11DW1MYN<=.z) THEN EASEQM=4;
				IF (Y11DWQMYN=0 AND Y11DWQMEZ<0) AND (Y11DW1MYN=0 AND Y11DW1MEZ<=.z) THEN EASEQM=5;
				
				IF Y11DWQMYN=1 AND Y11DWQMDF<0 THEN EASEQM=7-Y11DWQMEZ;
				IF Y11DWQMYN=1 AND Y11DWQMDF<0 AND Y11DWQMEZ<0 THEN EASEQM=2;
				IF Y11DWQMYN<0 AND Y11DWQMDF>0 THEN EASEQM=4-Y11DWQMDF;
				IF Y11DWQMYN<0 AND Y11DWQMEZ>0 THEN EASEQM=7-Y11DWQMEZ;
				
				IF Y11DWQMYN=8 and Y11DWQMEZ=8 then EASEQM=4;
				IF Y11DWQMYN=9 AND Y11MNRS<0 AND (Y11MNRS4<0 OR Y11MNRS4=8) THEN EASEQM=.;
					6=very easy
					5=somewhat easy
					4=not that easy
					3=a little difficult
					2=somewhat difficult
					1=very difficult
					0=unable to do

Self-Reported Function Calculated Variables

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels

EASE1M	Ease walking 1 mile	Recode of Y11DW1MEZ where 3 is easiest; imputations applied for missing Y11DW1MEZ	If Y11DW1MYN=1 then EASE1M=0;
			if Y11DW1MEZ=3 then EASE1M=1;
			if Y11DW1MEZ=2 then EASE1M=2;
			if Y11DW1MEZ=1 then EASE1M=3
				IF Y11DW1MYN=8 AND (Y11DW1MEZ<0 OR Y11DW1MEZ=8) THEN EASE1M=1;
				IF Y11DW1MYN<=.z AND Y11DW1MEZ<=.z AND EASEQM=4 THEN EASE1M=0;
				IF Y11DW1MYN<=.z AND Y11DW1MEZ<=.z AND EASEQM=5 THEN EASE1M=1;
				IF Y11DW1MYN<=.z AND Y11DW1MEZ<=.z AND EASEQM=6 THEN EASE1M=2;
				IF Y11DW1MYN=0 AND Y11DW1MEZ<=.z AND EASEQM=4 THEN EASE1M=0;
				IF Y11DW1MYN=0 AND Y11DW1MEZ<=.z AND EASEQM=5 THEN EASE1M=1;
				IF Y11DW1MYN=0 AND Y11DW1MEZ<=.z AND EASEQM=6 THEN EASE1M=2;
				IF Y11DWQMYN=1 THEN EASE1M=0;
				
				IF EASEQM GT 0 AND ((EASEQM-3) LT EASE1M) THEN DO;
				IF EASEQM LE 3 THEN EASE1M=0; ELSE
				EASE1M=EASEQM-3;
				END;
				if Y11DW1MYN=8 and Y11DW1MEZ in (1,2,3) then EASE1M=4-Y11DW1MEZ;
				if Y11DW1MYN=0 and Y11DW1MEZ=8 then EASE1M=EASEQM-4;
					3=very easy
					2=somewhat easy
					1=not that easy
					0=difficult

WKAINDEX	Walking ability index	Summary measure of self-reported walking ability.	WKAINDEX=EASEQM + EASE1M	Imputed version of component variables used	This scale ranges from 0 (unable) to 9 (very easy)

Self-Reported Function Calculated Variables

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
EASE1F	Ease Climbing 1 flight	Recode of Y11DW10EZ where 3 is easiest; imputations applied for missing Y11DW20EZ	EASE1F=7-Y11DW10EZ; IF Y11DW10YN=1 THEN EASE1F=4-Y11DIF;	IF Y11DW10YN=9 then EASE1F=.; IF Y11DW10EZ=8 THEN Y11DW10EZ=2; IF Y11DIF=8 THEN Y11DIF=2; IF Y11DW10EZ<0 THEN EASE1F=7-Y11DW20EZ; IF Y11DW10YN=1 AND (Y11DIF=8 OR Y11DIF<0) THEN EASE1F=2; IF Y11DW10YN=0 AND Y11DW10EZ<0 AND Y11DW10EZ<0 THEN EASE1F=4; IF EASE1F=. AND Y11DW10YN NE 9 AND Y11DW10YN>0 AND (Y11DW20YN=1 OR Y11DW20YN=8 OR Y11DW20YN<=.z) THEN EASE1F=4; IF EASE1F=. AND Y11DW20YN=0 AND Y11DW20EZ<=.z THEN EASE1F=5;	6=very easy 5=somewhat easy 4=not that easy 3=a little difficult 2=somewhat difficult 1=very difficult 0=unable to do

EASE2F	Ease Climbing 2 flights	Recode of Y11DW20EZ where 3 is easiest; imputations applied for missing Y11DW20EZ	IF Y11DW20YN=1 THEN EASE2F=0;
			ELSE IF Y11DW20EZ=3 THEN EASE2F=1;
			ELSE IF Y11DW20EZ=2 THEN EASE2F=2;
			ELSE IF Y11DW20EZ=1 THEN EASE2F=3;
				IF Y11DW10YN=9 then EASE1F=.;
				IF (Y11DW20YN=8 OR Y11DW20YN<0)AND (Y11DW20EZ<0 OR Y11DW20EZ=8) AND EASE1F>0 THEN EASE2F=1;
				IF Y11DW20YN<=.z AND Y11DW20EZ<=.z AND EASE1F=4 THEN EASE2F=0;
				IF Y11DW20YN<=.z AND Y11DW20EZ<=.z AND EASE1F=5 THEN EASE2F=1;
				IF Y11DW20YN<=.z AND Y11DW20EZ<=.z AND EASE1F=6 THEN EASE2F=2;
				IF Y11DW20YN=0 AND (Y11DW20EZ<=.z OR Y11DW20EZ=8) AND EASE1F>0 THEN EASE2F=EASE1F-4;
				IF Y11DW10YN=1 THEN EASE2F=0;
				
				IF .z<EASE1F<=3 THEN EASE2F=0; ELSE
				IF (EASE1F-3) LT EASE2F THEN EASE2F=EASE1F-3;
					3=very easy
					2=somewhat easy
					1=not that easy
					0=difficult

CSAINDEX	Climbing stairs ability index	Summary measure of self-reported walking ability.	CSAINDEX=EASE1F + EASE2F	Imputed version of component variables used	This scale ranges from 0 (unable) to 9 (very easy)

```
*************************************************************************
*  Saved as:
*  \\Fu-hsing-c\HABC\HABC_SAS\Calculated Variables\Programs\Year 11\srfcn_Y11.sas
*
*  Ase Sewall 12/10/2009 - Modified year 11 program for use in Year 11
*************************************************************************;

*************************************************************************;
**  HABC Year 11 SELF-REPORT PHYSICAL FUNCTION CALC VAR CODE          **;
**                                                                     **;
**  Creates the following variables:                                   **;
**     EASEQM:   ease of walking 1/4 mile                              **;
**     EASE1M:   ease of walking 1 mile                                **;
**     EASE1F:   ease of climbing 1 flight                             **;
**     EASE2F:   ease of climbing 2 flights                            **;
**     EASE10P:  ease of lifting/carrying 10 lbs                       **;
**     EASE20P:  ease of lifting/carrying 20 lbs                       **;
**     EASEUP:  ease of standing up from chair w/o using arms          **;
**     CSAINDEX: climbing stairs ability index                         **;
**     WKAINDEX: walking ability index                                 **;
**     LCAINDEX: lift/carry ability index                              **;
**                                                                     **;
** Adapted from FY11n Harris Y2 code: srfcn_y2.sas                     **;
*************************************************************************;


*DM LOG 'CLEAR' ; *DM OUTPUT 'CLEAR' ;

%include '\\Fu-hsing-c\HABC\HABC_SAS\Programs\initV8_ase.sas';
libname calc '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year 11';


*options ls=90 ps=56 formchar='|----|+|---+=|-/\<>*' nodate nofmterr;

data calc.Y11srfcn (keep=HABCID EASE1F EASE2F EASEQM EASE1M EASE10P EASE20P EASEUP
CSAINDEX WKAINDEX
                LCAINDEX);
        set daf.y11visit (keep=habcid  Y11dwqmyn Y11dwqmdf Y11mnrs
                          Y11dwqmez Y11dw1myn Y11dw1mez
                          Y11dw10yn Y11dif
                          Y11dw10ez Y11dw20yn Y11dw20ez
                          Y11difsta Y11ezsta Y11dstamt
                          Y11dif10 Y11d10amt Y11ez10lb Y11d20lbs Y11ez20lb) ;
        by habcid ;

        LABEL   EASEQM  ='EASE WALKING 1/4 MILE, 6=VERY EASY'
                        EASE1M   ='EASE WALKING 1 MILE, 3=VERY EASY'
                        WKAINDEX ='WALKING ABILITY INDEX, 9=BEST'
                        EASE1F   ='EASE CLIMBING 1 FLIGHT, 6=VERY EASY'
                        EASE2F   ='EASE CLIMBING 2 FLIGHTS, 3=VERY EASY'
                        CSAINDEX ='CLIMBING STAIRS ABILITY INDEX, 9=BEST'
                        EASE10P  ='EASE LIFT/CARRY 10 LBS, 6=VERY EASY'
                        EASE20P  ='EASE LIFT/CARRY 20 LBS, 3=VERY EASY'
                        LCAINDEX ='LIFT/CARRY ABILITY INDEX, 9=BEST'
                        EASEUP   ='EASE STANDING FROM CHAIR WITHOUT USING ARMS,
6=VERY EASY';
```

```
        *EASEQM: CODE FOR EASE OF WALKING 1/4 MILE
        IF EASE LEVEL MISSING, EASE LEVEL WALKING 1 MILE WAS ASSIGNED. IF NO EASE
LEVEL FOR WALKING
        1M WAS CODED AND Y11dw1myn WAS YES, DONT KNOW, OR MISSING THEN NOT THAT
EASY WAS ASSIGNED. IF NO
        EASE LEVEL FOR WALKING 1M WAS CODED AND Y11dw1myn WAS NO AND Y11dw1mez WAS
MISSING THEN SOMEWHAT
        EASY WAS ASSIGNED.  THE 4 CASES WHO REPORTED DIFFICULTY WERE RECODED TO
NOT THAT EASY FOR QM
        AND DIFFICULTY FOR 1M;

        IF Y11dwqmyn=9 AND (Y11mnrs>0 and Y11mnrs ne 22)  THEN Y11dwqmyn=1;
        IF Y11dwqmez=8 and Y11dwqmyn ne 8 THEN Y11dwqmez=2;
        IF Y11dwqmdf=8 and Y11dwqmyn ne 8 THEN Y11dwqmdf=2;
        IF Y11dwqmyn IN (0,7,8) AND Y11dwqmez<0 THEN EASEQM=4;
        ELSE IF Y11dwqmyn IN (0,7,8) THEN EASEQM=7-Y11dwqmez;
        IF (Y11dwqmyn=0 AND Y11dwqmez<0) THEN EASEQM=7-Y11dw1mez;
        IF (Y11dwqmyn=0 AND Y11dwqmez<0) & Y11dw1mez<0 & (Y11dw1myn in(1,8) OR
                Y11dw1myn<=.z) THEN EASEQM=4;
        IF (Y11dwqmyn=0 & Y11dwqmez<0) & (Y11dw1myn=0 & Y11dw1mez<=.z) THEN
EASEQM=5;
        IF Y11dwqmyn=1 THEN EASEQM=4-Y11dwqmdf;

        IF Y11dwqmyn=1 AND Y11dwqmdf<0 THEN EASEQM=7-Y11dwqmez;
        IF Y11dwqmyn=1 AND Y11dwqmdf<0 AND Y11dwqmez<0 THEN EASEQM=2;
        IF Y11dwqmyn<0 AND Y11dwqmdf>0 THEN EASEQM=4-Y11dwqmdf;
        IF Y11dwqmyn<0 AND Y11dwqmez>0 THEN EASEQM=7-Y11dwqmez;

        if Y11dwqmyn=8 and Y11dwqmez=8 then EAseqm=4;
        IF Y11dwqmyn=9 AND (Y11mnrs<0 or Y11mnrs=22) THEN EASEQM=.;


        *EASE1M:  CODE FOR EASE OF WALKING 1 MILE. AS SELF-REPORTED WALKING
ABILITY IS A KEY DEPENDENT
        MEASURE IN HEALTH ABC, MISSING VALUES WERE RECODED TO NON-MISSING WHENEVER
A REASON
        GUESS COULD BE MADE BASED ON OTHER AVAILABLE INFORMATION. SEE BELOW FOR
CODE AND
        RECODING RULES FOR MISSING VALUES;

        IF Y11dw1myn=1 THEN EASE1M=0;
        ELSE IF Y11dw1mez=3 THEN EASE1M=1;
        ELSE IF Y11dw1mez=2 THEN EASE1M=2;
        ELSE IF Y11dw1mez=1 THEN EASE1M=3;

        *MISSING VALUE RECODES;

        IF Y11dw1myn=8 AND (Y11dw1mez<0 OR Y11dw1mez=8) THEN EASE1M=1;
        IF Y11dw1myn<=.z AND Y11dw1mez<=.z AND EASEQM=4 THEN EASE1M=0;
        IF Y11dw1myn<=.z AND Y11dw1mez<=.z AND EASEQM=5 THEN EASE1M=1;
        IF Y11dw1myn<=.z AND Y11dw1mez<=.z AND EASEQM=6 THEN EASE1M=2;
        IF Y11dw1myn=0 AND Y11dw1mez<=.z AND EASEQM=4 THEN EASE1M=0;
        IF Y11dw1myn=0 AND Y11dw1mez<=.z AND EASEQM=5 THEN EASE1M=1;
        IF Y11dw1myn=0 AND Y11dw1mez<=.z AND EASEQM=6 THEN EASE1M=2;
        IF Y11dwqmyn=1 THEN EASE1M=0;
```

```
        *IN SOME CASES THE AMOUNT OF EASE REPORTED FOR WALKING 1 MILE WAS GREATER
THAN
        THE AMOUNT OF EASE REPORTED FOR 1/4 MILE.  THE CODE BELOW DOWNGY11DES THE
EASE
        LEVEL REPORTED FOR 1M TO THAT REPORTED FOR 1/4M;

        IF EASEQM GT 0 AND ((EASEQM-3) LT EASE1M) THEN DO;
                IF EASEQM LE 3 THEN EASE1M=0; ELSE
                EASE1M=EASEQM-3;
        END;

        if Y11dw1myn=8 and Y11dw1mez in (1,2,3) then EAse1m=4-Y11dw1mez;
        if Y11dw1myn=0 and Y11dw1mez=8 then EAse1m=EAseqm-4;


        *CODE TO CREATE A SUMMARY MEASURE OF SELF-REPORTED WALKING ABILITY. THIS
        SCALE WILL ULTIMATELY Y11NGE FROM 0 TO 9, BUT AT BASELINE IT Y11NGES FROM
        4-9, AS NO ONE HAS DIFFICULTY. THIS SCALE CAN BE CREATED IN TWO WAYS: 1)
KEYING
        OFF THE RESPONSE TO EASE1M AND ONLY LOOKING AT EASEQM WHEN DIFFICULTY IS
        REPORTED FOR 1M OR 2) SUMMING THE RESPONSES TO THE TWO QUESTIONS. I
        DID IT BOTH WAYS AND FOUND THE LATTER APPROACH SUPERIOR;

        WKAINDEX=EASEQM + EASE1M;


        *CODE FOR EASE OF CLIMBING STAIRS;

        *EASE1F;

        IF Y11dw10yn=9 THEN DO; EASE1F=.; EASE2F=.; END;
        IF Y11dw10ez=8 THEN Y11dw10ez=2;
        IF Y11dif=8 THEN Y11dif=2;
        EASE1F=7-Y11dw10ez;
        IF Y11dw10ez<0 THEN EASE1F=7-Y11dw20ez;
        IF Y11dw10yn=1 THEN EASE1F=4-Y11dif;
        IF Y11dw10yn=1 AND (Y11dif=8 OR Y11dif<0) THEN EASE1F=2;
        IF Y11dw10yn=0 AND Y11dw10ez<0 AND Y11dw10ez<0 THEN EASE1F=4;

        IF EASE1F=. & Y11dw10yn NE 9 & Y11dw10yn>0 & (Y11dw20yn=1 OR
                Y11dw20yn=8 OR Y11dw20yn<=.z ) THEN EASE1F=4;
        IF EASE1F=. AND Y11dw20yn=0 AND Y11dw20ez<=.z THEN EASE1F=5;


        *EASE2F;

        IF Y11dw20yn=1 THEN EASE2F=0;
        ELSE IF Y11dw20ez=3 THEN EASE2F=1;
        ELSE IF Y11dw20ez=2 THEN EASE2F=2;
        ELSE IF Y11dw20ez=1 THEN EASE2F=3;
        IF (Y11dw20yn=8 OR Y11dw20yn<0)AND (Y11dw20ez<0 OR Y11dw20ez=8) AND
EASE1F>0 THEN EASE2F=1;
        IF Y11dw20yn<=.z AND Y11dw20ez<=.z AND EASE1F=4 THEN EASE2F=0;
        IF Y11dw20yn<=.z AND Y11dw20ez<=.z AND EASE1F=5 THEN EASE2F=1;
        IF Y11dw20yn<=.z AND Y11dw20ez<=.z AND EASE1F=6 THEN EASE2F=2;
        IF Y11dw20yn=0 AND (Y11dw20ez<=.z OR Y11dw20ez=8) AND EASE1F>0 THEN
EASE2F=EASE1F-4;
```

```
        IF Y11dw10yn=1 THEN EASE2F=0;

        IF .z<EASE1F<=3 THEN EASE2F=0; ELSE
        IF (EASE1F-3) LT EASE2F THEN EASE2F=EASE1F-3;


        *CODE TO CREATE A SUMMARY MEASURE OF SELF-REPORTED STAIR CLIMBING ABILITY.
THIS SCALE WILL
        Y11NGE FROM 0 TO 9, BUT AT BASELINE IT Y11NGES FROM 4-9;

        CSAINDEX=EASE1F + EASE2F;


        *CODE FOR LIFTING/CARRYING;

        IF Y11dif10=0 AND (Y11ez10lb=8 OR Y11ez10lb<0) THEN EASE10P=5;
        ELSE IF Y11dif10 IN (0,7,8) and Y11ez10lb ne 8 THEN EASE10P=7-Y11ez10lb;
        else if Y11dif10 in (0,7,8) and Y11ez10lb=8 then EAse10p=4;
        IF Y11dif10=1 AND (Y11d10amt=8 OR Y11d10amt<0) THEN EASE10P=.;
        ELSE IF Y11dif10=1 THEN EASE10P=4 - Y11d10amt;
        IF Y11dif10<=.z & Y11d10amt>0 & Y11ez10lb<0 THEN EASE10P=4 - Y11d10amt;
        IF Y11dif10<=.z & Y11d10amt<0 & Y11ez10lb>0 THEN EASE10P=7 - Y11ez10lb;
        IF EASE10P=. & Y11d20lbs NE 1 & Y11d20lbs NE 8 THEN EASE10P=7-Y11ez20lb;
        IF EASE10P=. & Y11d20lbs=0 & (Y11ez20lb LT 0 OR Y11d20lbs=8) THEN
EASE10P=6;
        IF EASE10P=. AND Y11dif10=0 AND Y11d20lbs=1 THEN EASE10P=4;
        IF EASE10P=. AND Y11dif10=8 AND Y11d20lbs=1 THEN EASE10P=4;
        IF EASE10P=. & Y11dif10 IN (0,8) & (Y11d20lbs<0 OR Y11d20lbs=8) &
                (Y11ez20lb<0 OR Y11ez20lb=8) THEN EASE10P=4;
        IF EASE10P=. AND Y11dif10=0 AND Y11ez10lb<=.z AND Y11d10amt>0 THEN
                EASE10P=4 - Y11d10amt;


        *IF Y11ez20lb=8 and Y11d20lbs ne 8 THEN Y11ez20lb=2;
        EASE20P=4-Y11ez20lb;
        if Y11d20lbs=8 and (Y11ez20lb=8 or Y11ez20lb<0) then EAse20p=1;
        if Y11d20lbs=0 and Y11ez20lb=8 then EAse20p=EAse10p-4;

        IF Y11d20lbs=1 THEN EASE20P=0;
        IF (0 LE EASE10P LE 3) THEN EASE20P=0;

        IF (Y11d20lbs<=.z OR Y11d20lbs=0) and (Y11ez20lb<=.z OR Y11ez20lb=8)
                AND EASE10P=4 THEN EASE20P=0;
        IF (Y11d20lbs=0 OR Y11d20lbs<=.z) AND (Y11ez20lb<=.z OR Y11ez20lb=8)
                AND EASE10P=6 THEN EASE20P=2;
        IF (Y11d20lbs=0 OR Y11d20lbs<=.z) AND (Y11ez20lb<=.z OR Y11ez20lb=8)
                AND EASE10P=5 THEN EASE20P=1;

        IF (EASE10P-3) LT EASE20P THEN DO;
                EASE20P=EASE10P-3;
                IF EASE20P<0 THEN EASE20P=0;
        END;


        *CODE FOR SUMMARY INDEX;

        LCAINDEX=EASE10P + EASE20P;
```

```
        *OTHER FUNCTION MEASURES;

        IF Y11ezsta=8 and Y11difsta ne 8 THEN Y11ezsta=2;
        IF Y11dstamt=8 and Y11difsta ne 8 THEN Y11dstamt=2;
        IF Y11difsta IN (0,7,8) THEN EASEUP=7 - Y11ezsta;
        IF Y11difsta=1 THEN EASEUP=4 - Y11dstamt;
        if Y11difsta=8 and Y11ezsta=8 then EAseup=4;
        IF Y11difsta<=.z AND Y11dstamt>0 AND Y11ezsta<0 THEN EASEUP=4 - Y11dstamt;
        IF Y11difsta=8 AND Y11ezsta<0 AND Y11dstamt<0 THEN EASEUP=4;
        IF Y11difsta=0 AND Y11ezsta<=.z THEN EASEUP=5;
        IF Y11difsta=0 & Y11ezsta<=.z & Y11dstamt >0 THEN EASEUP=4 - Y11dstamt;

        *Formats;
        FORMAT EASE1F EASE2F EASEQM EASE1M EASE10P EASE20P EASEUP CSAINDEX
WKAINDEX
                LCAINDEX SPMISS.  /*TIRED1F TIREDQM YNDK.*/;

run ;

%macro skip ;

proc freq data=calc.Y11srfcn ;
        tables EASE1F EASE2F EASEQM EASE1M EASE10P EASE20P EASEUP CSAINDEX
WKAINDEX
                LCAINDEX ;
*       tables ease1m *  Y11dw1myn * Y11dwqmyn * Y11dw1mez  / list missing nocum ;
*   tables Y11dwqmyn Y11dwqmdf Y11mnrs ;
*   tables Y11dwqmyn * (Y11dwqmdf Y11mnrs) / list missing ;
*   tables (Y11dwqmez Y11dwqmdf) * Y11dwqmyn / list missing ;
*   tables Y11dwqmyn * Y11dwqmez * Y11dw1mez / list missing ;
*   tables Y11dwqmyn * Y11dwqmdf * Y11dwqmez / list missing nocum ;
*       tables easeqm ;
*       tables EASEQM*Y11dwqmyn*Y11dwqmez*Y11dwqmdf*Y11dw1myn*Y11dw1mez*Y11mnrs /
list
                missing nocum ;
*       tables Y11dw1myn*Y11dw1mez*EASEQM*Y11dwqmyn / list missing nocum ;
*       tables EASE1M*Y11dw1myn*Y11dw1mez*EASEQM*Y11dwqmyn / list
                missing nocum ;
*       tables WKAINDEX*EASEQM*EASE1M / list missing  ;
*       tables Y11dw10yn*Y11dw10ez*Y11dw20yn*Y11dw20ez*Y11dif / list missing  ;
*       tables EASE1F*Y11dw10yn*Y11dw10ez*Y11dw20yn*Y11dw20ez*Y11dif / list
missing  ;
*       tables EASE2F*Y11dw20yn*Y11dw20ez*EASE1F / list missing  ;
*       tables CSAINDEX*EASE1F*EASE2F / list missing  ;
*       tables TIRED1F*FADW10WX ;
*       tables EASE10P*Y11dif10*Y11ez10lb*Y11d10amt*Y11d20lbs*Y11ez20lb / list
missing  ;
*       tables EASE20P*Y11ez20lb*Y11d20lbs*EASE10P / list missing  ;
*       tables LCAINDEX*EASE10P*EASE20P / list missing  ;
*       tables EASEUP*Y11difsta*Y11ezsta*Y11dstamt / list missing  ;
*       tables EASEHHW*Y11difHW*FAEZHW*FADHWAMT / list missing  ;
*       tables Y11dwqmez Y11dw1myn Y11dw1mez ;
*       tables Y11dw10yn Y11dif ;
*       tables Y11dw10ez Y11dw20yn Y11dw20ez ;
*       tables Y11difsta ;
```

```
*       tables Y11dif10 Y11d10amt Y11ez10lb Y11d20lbs Y11ez20lb ;
*       format EASEQM Y11dwqmyn Y11dwqmez Y11dwqmdf Y11dw1myn Y11dw1mez Y11mnrs
         EASE1M WKAINDEX /*FADWQMT2*/
         EASE1F Y11dw10yn Y11dw10ez Y11dw20yn Y11dw20ez Y11dif
         EASE2F CSAINDEX /*TIRED1F FADW10WX */
         EASE10P Y11dif10 Y11ez10lb Y11d10amt Y11d20lbs Y11ez20lb
         EASE20P LCAINDEX
         /*EASEHHW Y11difHW FAEZHW FADHWAMT*/;
        FORMAT EASE1F EASE2F EASEQM EASE1M EASE10P EASE20P EASEUP CSAINDEX
WKAINDEX
                LCAINDEX SPMISS.  /*TIRED1F TIREDQM YNDK.*/;
run ;

proc contents data=calc.Y11srfcn ;
   title 'Year 11 - Self Reported Physical Functioning' ;
run ;
%mend skip ;
%skip;

***check for duplicates***;
data dupes;
  set calc.Y11srfcn;
  by habcid;
  if not(first.habcid and last.habcid);
run;

proc print;
title4 'Duplicates in SRFCN Y11';
run;

/*
libname calc_y10 '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year
10';
proc freq data=calc_y10.Y10srfcn ;
        tables EASE1F EASE2F EASEQM EASE1M EASE10P EASE20P EASEUP CSAINDEX
WKAINDEX
                LCAINDEX ;
   title 'Year 10 - Self Reported Physical Functioning' ;
   title2 "For comparison";
run ;
proc contents data=calc_y10.Y10srfcn ;
run ;
*/
```

Appendix III
Smoking Calculated Variables

Using Clinic Visit, Home Visit and Annual Telephone Interview Variables

Investigator Name: Stephen Kritchevsky

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
SMK11	Smoking Status at Year 11	0 is never smoker; 1 is former smoker; 2 is current smoker	If Y11smoke=1 then SMK11=1; Else if Y11smoke=0 and smk1=0 and (smk3=0 or smk3 le .z) and (smk5=0 or smk5 le .z) and (smk8=0 or smk8 le .z) and (smk9=0 or smk9 le .z) then SMK11=0; Else if Y11smoke=0 and (smk1 in (1,2) or smk3 in (1,2) or smk5 in(1,2) or smk8 in (1,2) or smk9 in (1,2) or smk10 in (1,2)) then SMK11=2; Else if Y11smoke le .z or Y11smoke in (7,8) then SMK11=.A; Else SMK11=.M;	If Y11SMOKE ≤ .z or Y11SMOKE in (7,8) then SMK11=.A	0=Never 1=Current 2=Former

```
************************************************************************
* Create calculated variables requested by SKritchevsky for:
* SMK11     Smoking status at Year 11
*
*
*  Ase Sewall 12/2/2009 - Modified year 10 program for use in Year 11
************************************************************************ ;

DM LOG 'CLEAR' ; DM OUTPUT 'CLEAR' ;

%include '\\Fu-hsing-c\habc\habc_sas\programs\initV8_ase.sas';
libname calc '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year
11';

*options ls=141 ps=46 formchar='|----|+|---+=|-/\<>*' nodate nofmterr
pageno=1 nocenter;

***** Smoking status at year 11;
data Y11smoke ;
  set daf.y11visit (keep=habcid y11smoke);
run;

data bl;  set current.y1calc (keep=habcid smk1);run;
data y3;  set current.y3calc (keep=habcid smk3);run;
data cm;  set current.y5calc (keep=habcid smk5);run;
data y8;  set current.y8calc (keep=habcid smk8);run;
data y9;  set current.y9calc (keep=habcid smk9);run;
data Y10;  set current.Y10calc (keep=habcid smk10);run;

data smoke;
  merge bl y3 cm y8 y9 y10 y11smoke;
  by habcid;
  label SMK11 = 'Smoking status at Year 11 visit';
  format SMK11 ncffmt. ;
  if Y11smoke le .z or Y11smoke in (7,8) then SMK11=.A;
  else if Y11smoke=1 then SMK11=1;
  *** Use smoking status at prior years to determine never/former status ***;
  else if Y11smoke=0 and smk1=0 and (smk3=0 or smk3 le .z) and (smk5=0 or
smk5 le .z)
    and (smk8=0 or smk8 le .z) and (smk9=0 or smk9 le .z) then SMK11=0;
  else if Y11smoke=0 and (smk1 in (1,2) or smk3 in (1,2) or smk5 in(1,2) or
smk8 in (1,2) or
    smk9 in (1,2) or smk10 in (1,2)) then SMK11=2;
  else SMK11=.M;
  ** 0=never, 1=current, 2=former **;
run;

data calc.Y11smoke;
  set smoke (keep=habcid SMK11);
run;

%macro skip ;

proc contents data=calc.Y11smoke;
run;
proc freq data=calc.Y11smoke;
  tables SMK11;
```

```
run;
proc freq data=smoke;
  table smk11*Y11smoke / list missing;
  tables smk11*y11smoke*SMK10*smk9*smk8*smk5*smk3*smk1 / list missing
nopercent;
  format _all_;
run;

***check for duplicates***;
data dupes;
  set calc.Y11smoke;
  by habcid;
  if not(first.habcid and last.habcid);
run;
proc print data=dupes;
title4 'Duplicates in Y11Smoke';
run ;


%mend skip ;
```

Appendix IV

Physical Activity Calculated Variables

Using Clinic Visit, Home Visit and Annual Telephone Interview Variables

Investigator Name: Eleanor Simonsick

Step 1: assign met estimates to each activity

Met estimates derive from Ainsworth BE, Haskell WL, Leon AS, Jacobs DR, Montoye HJ, Sallis JF, Paffenbarger RS. Compendium of physical activities: classification of energy costs of human physical activities. Med Sci Sports Exerc 25(1):71-80.

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11FSKKWK	kcal/kg/week climbing stairs	Assigns 4.0 kcal/kg/hour of stair climbing plus an additional 1.0 kcal/kg/hour carrying a load (Y10 Qaire, page 12, Q19). (Assumes 1 flight up/down takes 30 seconds.)	If Y11FS7DAY=1 then Y11FSKKWK = 4.0 x Y11FSNUM/120 +1.0 x Y11FSLOAD/120; If Y11FS7DAY=0 then Y11FSKKWK=0;	Correction for outliers: If Y11FSNUM>210 then Y11FSNUM=210; if Y11FSLOAD>210 then Y11FSLOAD=210; If Y11FS12MO≤.z and Y11FS7DAY≤.z then Y11FSKKWK=.; if (Y11FS12MO in (0,7,8)) and (Y11FS7DAY≤.z or Y11FS7DAY=8) then Y11FSKKWK=0; if Y11FS12MO=1 and (Y11FS7DAY≤.z or Y11FS7DAY=8) then Y11FSKKWK=0; if Y11FSKKWK<0 then do: if Y11FS7DAY=1 and Y11FSNUM > 0 and (Y11FSLOAD≤.z or Y11FSLODK=-1) then Y11FSLOAD=0; if Y11FS7DAY=1 and (Y11FSNUM≤.z or Y11FSNUMD=-1) and Y11FSLOAD > 0 then Y11FSNUM=Y11FSLOAD	kkcal/kg/week

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11MCKKWK	kcal/kg/week doing major chores	Assigns 3.5 kcal/kg/hour doing major chores (Y10 Qaire, page 11, Q17). Note: this question combines activities listed separately at baseline. Y11MCKKWK is therefore equivalent to the sum of baseline variables FPPAKKWK and FPHCKKWK.	3.5 x Y11HCTIM/60 if Y11HC7DAY=0 then Y11MCKKWK=0;	If Y11HC12MO≤.z and Y11HC7FAY≤.z then Y11MCKKWK=.; if (Y11HC12MO=0 or Y11HC12MO in (7,8) and (Y11HC7DAY≤.z or Y11HC7DAY=0) then Y11MCKKWK=0; if Y11HC12MO=1 and Y11HC7DAY≤.z then Y11MCKKWK=0; if Y11MCKKWK<0 then do: if Y11HC12MO=1 and Y11HC7DAY=1 and (Y11HCTIM≤.z or Y11HCDK=-1) then Y11HCTIM=120 (median value for non-missings at baseline; used here for consistency)	kkcal/kg/week

Y11TWKKWK	kcal/kg/week total walking	Assigns 4.0 kcal/kg/hour walking briskly, 3.0 to walking at moderate pace, and 2.0 to strolling (Y10 Qaire, page 12, Q18 - all walking)	If Y11EW7DAY=1 then Y11TWKKWK=
			
			4.0 x Y11EWTIME* Y11EWTIM/60 if Y11EWPACE=1,
			
			3.0 x Y11EWTIME* Y11EWTIM/60 if Y11EWPACE=2,
			
			2.0 x Y11EWTIME* Y11EWTIM/60 if Y11EWPACE=3
			
			if Y11EW7DAY=0 then Y11TWKKWK=0;
				If Y11EW12MO≤.z and Y11EW7RCY≤.z then Y11TWKKWK=.;
				if (Y11EW12MO in (0,7,8) and Y11EW7RCY≤.z then Y11TWKKWK=0;
				if Y11EW12MO=1 and Y11EW7RCY≤.z then Y11TWKKWK=0;
				if Y11TWKKWK<0 then do: if Y11EWTIME > 0 and Y11EWTIM > 0 and (Y11EWPACE≤.z or Y11EWPACE=8) then Y11TWKKWK=3.0 x Y11EWTIME*Y11EWTIM/60 (median value at baseline; used here for consistency);
				if Y11EWTIME > 0 and (Y11EWTIM≤.z or Y11EWTDK=-1) then Y11EWTIM=35 (median value at baseline; used here for consistency);
				if (Y11EWTIME≤.z or Y11EWTMDK=-1) and Y11EWTIM > 0 then Y11EWTIME=4 (median value at baseline; used here for consistency)
					kkcal/kg/week

Step 2: create composite variables

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
WSKKWK	kcal/kg/week - walking + stairs	Sum of exercise walking, other walking, and stair climbing variables	Y11TWKKWK + Y11FSKKWK	**Imputed version of component variables used; SAS SUM function used to sum all non-missing components**	kkcal/kg/week
WALKTIME	minutes walking/week	Adds minutes exercise walking and other walking in past week	WALKTIME=(Y11EWTIME x Y11EWTIM)	If Y11TWKKWK=0 then WALKTIME=0;	min
BKTWTIME	minutes walking briskly/week	Sum of minutes brisk exercise walking plus minutes brisk other walking	If Y11EWPACE=1 then BKTWTIME= Y11EWTIME x Y11EWTIM; If Y11EWPACE>1 then BKTWTIME=0; If Y11EWKKWK=0 then BKTWTIME=0;		min

Step 3: create categorical variables

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
WALKCAT	minutes walking/week category	Categories of time spent on any walking per week	If WALKTIME=0 then WALKCAT=0; if 0<WALKTIME<150 then WALKCAT=1; if WALKTIME ≥ 150 then WALKCAT=2	**Imputed version of component variables used**	0= 0 min/wk 1= between 0 and 150 min/wk 2= more than 150 min/wk
BRISK90	walks briskly ≥ 90 min/week	Dichotomous variable for walking briskly ≥90 min/week vs <90 min/week	If BKTWTIME=0 then BRISK90=0; if 0<BKTWTIME<90 then BRISK90=0; if BKTWTIME ≥ 90 then BRISK90=1	**Imputed version of component variables used**	0=No 1=Yes
BRISK180	walks briskly ≥ 180 min/week	Dichotomous variable for walking briskly ≥180 min/week vs <180 min/week	If BKTWTIME=0 then BRISK180=0; if 0<BKTWTIME<180 then BRISK180=0; if BKTWTIME ≥ 180 then BRISK180=1	**Imputed version of component variables used**	0=No 1=Yes

```
************************************************************************
*  Saved as  \\Fu-hsing-c\HABC\HABC_SAS\Calculated Variables\Programs\Year
11\Phact_y11.sas
*
*  Ase Sewall  12-2-2009 - Modified year 10 program for use in Year 11
************************************************************************ ;

%include '\\Fu-hsing-c\habc\habc_sas\programs\initV8.sas';
libname calc '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year
11';

data calc.y11phact (KEEP=HABCID Y11MCKKWK Y11FSKKWK Y11TWKKWK WALKTIME
WALKCAT BKTWTIME
                                            BRISK180 BRISK90 WSKKWK );
   set daf.y11visit;
   by habcid;

   Label Y11MCKKWK='KCAL/KG/WEEK DOING MAJOR CHORES'
         Y11FSKKWK='KCAL/KG/WEEK CLIMBING STAIRS'
         Y11TWKKWK='KCAL/KG/WEEK TOTAL WALKING'
         WALKTIME='MINUTES WALKING/WEEK'
         WALKCAT='MINUTES WALKING/WEEK CATEGORY'
         BKTWTIME='MINUTES WALKING BRISKLY/WEEK'
         BRISK90='WALKS BRISKLY >= 90 MIN/WEEK'
         BRISK180='WALKS BRISKLY >= 180 MIN/WEEK'
         WSKKWK='KCAL/KG/WEEK - WALKING + STAIRS';

   *****----- MAJOR CHORES (17);
   IF Y11HC12MO<=.z AND Y11HC7DAY<=.z THEN Y11MCKKWK=.;
   IF (Y11HC12MO=0 OR Y11HC12MO IN (7,8)) AND (Y11HC7DAY<=.z OR Y11HC7DAY=0)
THEN Y11MCKKWK=0;
   IF Y11HC7DAY=0 THEN Y11MCKKWK=0;
   IF Y11HC12MO=1 AND Y11HC7DAY<=.z THEN Y11MCKKWK=0;
   IF Y11HC7DAY=1 THEN Y11MCKKWK=3.5*Y11hctim/60;
   *IMPUTED MISSING CODE;
   IF Y11MCKKWK LT 0 THEN DO;
   IF Y11HC12MO=1 AND Y11HC7DAY=1 AND (Y11hctim<=.z OR Y11HCDK=-1) THEN
Y11hctim=120;
   IF Y11HC7DAY=1 THEN Y11MCKKWK=3.5*Y11hctim/60;
   END;

   *****----- WALKING FOR EXERCISE (18);
   IF Y11EWPACE=1 THEN Y11EWMET=4.0;
   IF Y11EWPACE=2 THEN Y11EWMET=3.0;
   IF Y11EWPACE=3 THEN Y11EWMET=2.0;
   IF Y11EW12MO<=.z AND Y11EW7DAY<=.z THEN Y11EWKKWK=.;
   else do ;
           IF (Y11EW12MO IN (0,7,8)) AND (Y11EW7DAY<=.z) THEN Y11EWKKWK=0;
           IF Y11EW7DAY=0 THEN Y11EWKKWK=0;
           IF Y11EW12MO=1 AND Y11EW7DAY<=.z THEN Y11EWKKWK=0;
           IF Y11EW7DAY=1 THEN Y11EWKKWK=Y11EWMET*Y11EWTIME*Y11EWTIM/60;
   end ;
   *IMPUTED MISSING CODE;
   IF Y11EWKKWK LT 0 THEN DO;
           IF Y11EWTIME > 0 AND Y11EWTIM > 0 AND (Y11EWPACE<=.z OR
Y11EWPACE=8) THEN Y11EWMET=3.0;
```

```
           IF Y11EWTIME > 0 AND (Y11EWTIM<=.z OR Y11EWTDK=-1) THEN
Y11EWTIM=35;
           IF (Y11EWTIME<=.z OR Y11EWTMDK=-1) AND Y11EWTIM > 0 THEN
Y11EWTIME=4;
           IF Y11EW7DAY=1 THEN Y11EWKKWK=Y11EWMET*Y11EWTIME*Y11EWTIM/60;
   END;

   *****----- Fix calculation of BKEWTIME EK 9/25/03;
   IF Y11EWPACE=1 THEN BKEWTIME=Y11EWTIME*Y11EWTIM;
     ELSE IF Y11EWPACE>1 THEN BKEWTIME=0;
     ELSE IF Y11TWKKWK=0 THEN BKEWTIME=0;
   BKTWTIME=BKEWTIME;
   IF BKTWTIME=0 THEN BRISK90=0;
     ELSE IF 0<BKTWTIME<90 THEN BRISK90=0;
     ELSE IF BKTWTIME GE 90 THEN BRISK90=1;
   IF BKTWTIME=0 THEN BRISK180=0;
     ELSE IF 0<BKTWTIME<180 THEN BRISK180=0;
     ELSE IF BKTWTIME GE 180 THEN BRISK180=1;

   *****----- New variable for total walking;
   Y11TWKKWK=Y11EWKKWK;
   IF Y11TWKKWK=0 THEN WALKTIME=0;
     ELSE IF Y11TWKKWK>0  THEN WALKTIME=Y11EWTIME*Y11EWTIM;
   IF WALKTIME=0 THEN WALKCAT=0;
     ELSE IF 0<WALKTIME<150 THEN WALKCAT=1;
     ELSE IF WALKTIME GE 150 THEN WALKCAT=2;

   *****----- CLIMBING STAIRS (19);
   * ASSUME UP/DOWN 1 FLIGHT TAKES 30 SECONDS AND ONE ADDITIONAL MET FOR
CARRYING A LOAD;
   * Cutoff for flights of stairs - only for purpose of calculated variables
***;
   *** See email from MLE dated 4/6/01
***;
   IF Y11FSNUM>210 then Y11FSNUM=210;
   IF Y11FSLOAD>210 THEN Y11FSLOAD=210;
   IF Y11FS12MO<=.z AND Y11FS7DAY<=.z THEN Y11FSKKWK=.;
   IF (Y11FS12MO=0 OR Y11FS12MO=8 OR Y11FS12MO=7) AND (Y11fs7day=8 OR
Y11fs7day<=.z) THEN Y11FSKKWK=0;
   IF Y11fs7day=0 THEN Y11FSKKWK=0;
   IF Y11FS12MO=1 AND (Y11fs7day<=.z OR Y11fs7day=8) THEN Y11FSKKWK=0;
   IF Y11fs7day=1 THEN Y11FSKKWK=(4.0*Y11FSNUM/120) + (1.0*Y11FSLOAD/120);
   *IMPUTED MISSING CODE;
   IF Y11FSKKWK LT 0 THEN DO;
   IF Y11fs7day=1 AND Y11FSNUM GT 0 AND (Y11FSLOAD<=.z OR Y11FSLODK=-1) THEN
Y11FSLOAD=0;
   IF Y11fs7day=1 AND (Y11FSNUM<=.z OR Y11FSNUMD=-1) AND Y11FSLOAD GT 0 THEN
Y11FSNUM=Y11FSLOAD;
   IF Y11fs7day=1 THEN Y11FSKKWK=(4.0*Y11FSNUM/120) + (1.0*Y11FSLOAD/120);
END;

   *****----- WALKING AND STAIRS;
   WSKKWK=SUM(OF Y11FSKKWK Y11TWKKWK);

   format brisk180 brisk90 yndk. walkcat walk9x.;
run;
```

```
%MACRO SKIP ;
proc contents data=CALC.y11phact varnum;
 title4 'Final Dataset';
run;
proc freq data=CALC.y11phact;
tables brisk90 brisk180 walkcat/missing;
run;
proc univariate data=CALC.y11phact;
var bktwtime Y11mckkwk Y11fskkwk Y11twkkwk walktime wskkwk;
run;
%MEND SKIP ;

***check for duplicates***;
data dupes;
  set CALC.y11phact;
  by habcid;
  if not(first.habcid and last.habcid);
run;

proc print;
title4 'Duplicates in phact y11';
run;
```

Appendix V
Lifestyle Calculated Variables

Investigator Name: Stephen Kritchevsky

Variable	General description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
CURDRNK11	Drinking Consumption at Year 11	1= no consumption in the past year. 2 = less than once per week 3 = 1-7 times per week 4 = more than 1 per day	If Y11DA12MO=1 then CURDRNK11 = 1; If Y11DA12MO=2 then CURDRNK11 = 2; If Y11DA12MO = 3 or 4 then CURDRNK11 = 3; If Y11DA12MO = 5,6,9,or 10 then CURDRNK11 = 4;		1=No consumption in past year 2=Less than once per week 3=1-7 times per day 4=More than 1 per day

DRINKER11	Drinking History at Year 11	Those reporting any alcohol consumption in a typical week at Year 11 are Current Drinkers;
		
		Those reporting no consumption at Year 11 but some consumption in the past are former drinkers;
		
		Those reporting neither are non-drinkers;
			If (Y11DA12MO=1 and Y11MORE=0 and Y11DARND NE 5 and Y11DA5XDA NE 1) and DRINKER1 NE 1 or 2 then DRINKER11=0;
			If (Y11DA12MO=1 and Y11MORE=0 and Y11DARND NE 5 and Y11DA5XDA NE 1) and DRINKER1= 1 or 2 then DRINKER11=2;
			
			If Y11DA12MO = 2,3,4,5,6,9, or 10 then DRINKER11=1;
			
			If Y11DA12MO=1 and (Y11MORE=1 OR Y11DARND=5) then DRINKER11=2;
					0=Never
					1=Current
					2=Former

```
*************************************************************************
* Create calculated variables for: Alcoholic beverage consumption
* Alcohol_y11
*
*     DRINKER11
*       0:Never
*       1:Current
*       2:Former
*
*     CURDRNK11
*       1:No consumption in past year
*       2:Less than once per week
*       3:1 - 7 times per week
*       4:More than 1 per day
*
*************************************************************************;

DM LOG 'CLEAR' ; DM OUTPUT 'CLEAR' ;

%include '\\Fu-hsing-c\habc\habc_sas\programs\initV8_ase.sas';
libname calc '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year
11';

*options ls=141 ps=46 formchar='|----|+|---+=|-/\<>*' nodate nofmterr
pageno=1 nocenter;

***** Alcoholic beverage consumption;
data Y11Alcohol;
  set daf.y11visit (keep = habcid y11da12mo y11more y11darnd y11da5xda
y11da5x12);

  *** Drinking status at year 11 ***;
  IF Y11DA12MO=1 AND Y11MORE=0 AND Y11DARND NE 5 and Y11DA5XDA NE 1 THEN
DRINKER11=0; else
  IF Y11DA12MO in (2,3,4,5,6,9,10) THEN DRINKER11=1; else
  IF Y11DA12MO=1 AND (Y11MORE=1 OR Y11DARND=5) THEN DRINKER11=2; else
                                  DRINKER11=.;
  *** Current drinking status ***;
  IF Y11DA12MO=1             THEN CURDRNK11=1; else
  IF Y11DA12MO=2             THEN CURDRNK11=2; else
  IF Y11DA12MO in (3,4)      THEN CURDRNK11=3; else
  IF Y11DA12MO in (5,6,9,10) THEN CURDRNK11=4; else
                                  CURDRNK11=.;
run;

** Edit non-drinker if reported to be a current or former drinker in year 1;
data Y11Alcohol2;
  merge Y11Alcohol
        current.y1calc (keep = habcid drinker1);
  by habcid;
  if drinker11=0 and drinker1 in (1,2) then drinker11=2;
run;

data calc.Y11Alcohol;
  set Y11alcohol2 (keep = habcid drinker11 curdrnk11);
  label DRINKER11 = 'Drinking history at year 11'
        CURDRNK11 = 'Current drinking consumption at year 11';
```

```
  format DRINKER11 ncffmt. CURDRNK11 curdrnkf.;
run;

/*
proc contents data=calc.y11alcohol varnum;
run;
proc freq data=calc.y11alcohol;
  table drinker11*curdrnk11 / list missing;
run;
proc freq data=y11alcohol2;
  table drinker11*drinker1 / list missing;
run;
*/
```

Appendix VI
Anthropometric Measures -- Derived Variables

Using Clinic and Home Visit Variables

Investigator Name: **Emily Kenyon and Ase Sewall**

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11SH	Average of the Year 11 standing height measurements	Average of 1-4 Year 11 standing height measurements	If only 2 standing height measurements were obtained (Y11SH1 and Y11SH2), the average of Y11SH1 and Y11SH2 was taken. If all 4 measurements were made, the average of Y11SH3 and Y11SH4 was taken. If for some reason 3 measurements were made -- which is not according to protocol, the average all 3 measurements was taken. If only one measurement was obtained, this measurement was used.	If Y11SH1, Y11SH2, Y11SH3, and Y11SH4 are all missing, Y11SH=.M	mm
Y11WTK	Weight	Weight in kg	Y11WT = mean of Y11WTK1 and Y11WTK2	n/a	kg

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
Y11BMI	Body Mass Index	Weight in kg / height in meters squared	Calculated from weight in kg reported for year 11(Y11WTK) and the last available reported height in mm using the equation: BMI = Y11WTK/((height/1000)**2)	If Y11WTK is missing or Y11SH is missing and no prior height is available BMI=.M	kg/m2
BMICAT	Body Mass Index Category	Body mass categories according to NIH guidelines	BMICAT=1 if BMI<25 BMICAT=2 if 25≤BMI<30 BMICAT=3 if BMI ≥ 30	If BMI is missing, BMICAT=.M	1=normal 2=overweight 3=obese

```
************************************************************************
*  Saved as  \\Fu-hsing-c\HABC\HABC_SAS\Calculated Variables\Programs\Year
11\Anthrop_Y11.sas
*
*  Ase Sewall 11/23/09 - Combined height, weight, and BMI
************************************************************************ ;
*DM LOG 'CLEAR' ; *DM OUTPUT 'CLEAR' ;

%include '\\Fu-hsing-c\habc\habc_sas\programs\initV8.sas';
libname calc '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year
11';

** temporary for testing;
*libname daf 'c:\temp';

*options ls=90 ps=56 formchar='|----|+|---+=|-/\<>*' nodate nofmterr;

options mprint;
*********calculating*********;
%macro avgmeas(var);
 nmisstot=nmiss(of &var.1-&var.4);
 if nmisstot=0 then do;
    &var=mean(&var.3,&var.4);
    if max(&var.3,&var.4)>min(&var.3,&var.4)*1.2 then
       put habcid '09'x "&var.1" '09'x &var.1 '09'x
                        "&var.2" '09'x &var.2 '09'x
                        "&var.3" '09'x &var.3 '09'x
                        "&var.4" '09'x &var.4 '09'x ;
 end; else
 if nmisstot=1 then do;
    &var=mean(&var.1,&var.2,&var.3,&var.4);
    if max(&var.1,&var.2,&var.3,&var.4)>min(&var.1,&var.2,&var.3,&var.4)*1.2
then
       put habcid '09'x "&var.1" '09'x &var.1 '09'x
                        "&var.2" '09'x &var.2 '09'x
                        "&var.3" '09'x &var.3 '09'x
                        "&var.4" '09'x &var.4 '09'x ;
 end; else
 if nmisstot=2 then do;
    &var=mean(&var.1,&var.2,&var.3,&var.4);
    if max(&var.1,&var.2,&var.3,&var.4)>min(&var.1,&var.2,&var.3,&var.4)*1.2
then
       put habcid '09'x "&var.1" '09'x &var.1 '09'x
                        "&var.2" '09'x &var.2 '09'x
                        "&var.3" '09'x &var.3 '09'x
                        "&var.4" '09'x &var.4 '09'x ;
 end; else
 if nmisstot=3 then &var=max(&var.1,&var.2,&var.3,&var.4);
%mend avgmeas;


/*  Year 1 - Average Standing Height  */
data y1ht;
  set current.y1calc(keep=habcid p2sh);
run;

/*  Year 4 - Average Standing Height  */
```

```
data y4ht;
  set habc4.d2(keep=habcid d2sh1 d2sh2 d2sh3 d2sh4);
  %avgmeas(d2sh);
run;

/* Year 6 - Average Standing Height  */
data y6ht;
  set habc6.f3(keep=habcid f3sh1 f3sh2 f3sh3 f3sh4);
  %avgmeas(f3sh);
run;

/* Year 8 - Average Standing Height & Weight */
data y8htwt ;
   set habcrts.s4 (keep=habcid s4sh1 s4sh2 s4sh3 s4sh4 s4contac
where=(s4contac=16));
   %avgmeas(s4sh);
run;

/* Year 10 - Average Standing Height & Weight */
data y10htwt ;
   set habcrts.s4 (keep=habcid s4sh1 s4sh2 s4sh3 s4sh4 s4contac
where=(s4contac=20));
   %avgmeas(s4sh);
run;

/* Year 11 - Average Standing Height & Weight */
data Y11htwt ;
   set daf.Y11Visit  (keep=habcid Y11sh1 Y11sh2 Y11sh3 Y11sh4 Y11WTK1
Y11wtk2);
   by habcid;

   label Y11SH = "Average year 11 standing height";
   %avgmeas(Y11SH);

   label Y11WTK = "Weight in KG";
   if Y11WTK1 > .z or Y11wtk2 > .z then Y11WTK = mean(Y11WTK1,Y11wtk2) ;
   diffwtk = (Y11WTK1-Y11wtk2);
run;

/* Year 11 - Calculate BMI (use height from prior years if missing) */
data calc;
   merge y1ht (rename=(p2sh=y1sh))
         y4ht (rename=(d2sh=y4sh))
         y6ht (rename=(f3sh=y6sh))
         y8htwt (rename=(s4sh=y8sh))
         y10htwt (rename=(s4sh=y10sh))
         Y11htwt  (in=inY11) ;
   by habcid;
   if inY11;

   label Y11BMI='BMI, kg/m2';
   if Y11WTK > 0 then do ;
     if y11sh > 0 then Y11BMI=Y11WTK/((y11sh/1000)**2);
       else if y10sh >0 then Y11BMI=Y11WTK/((y10sh/1000)**2);
       else if y8sh >0 then Y11BMI=Y11WTK/((y8sh/1000)**2);
       else if y6sh >0 then Y11BMI=Y11WTK/((y6sh/1000)**2);
       else if y4sh >0 then Y11BMI=Y11WTK/((y4sh/1000)**2);
```

```
       else if y1sh >0 then Y11BMI=Y11WTK/((y1sh/1000)**2);
   end ;

   label Y11BMICAT='BMI Category';
   if .z< Y11BMI< 25 then Y11BMICAT=1;
     else if 25<=Y11BMI< 30 then Y11BMICAT=2;
     else if     Y11BMI>=30 then Y11BMICAT=3;
   format Y11BMICAT BMIcf.;
run;

/* Year 11 - Final Anthropometric File */
data calc.Y11Anthrop (keep=HABCID Y11BMI Y11BMICAT Y11WTK Y11SH);
   set calc ;
run;

/* Data Checks */
%macro skip ;

proc univariate data=calc;
  var Y11sh Y11wtk Y11BMI;
run;

proc freq data=calc ;
  table Y11BMICat;
run;

** Height difference between years;
data HeightData;
  set calc;
  Y1Y4Diff = y4sh-y1sh;
  Y4Y6Diff = y6sh-y4sh;
  Y6Y8Diff = y8sh-y6sh;
  Y8Y10Diff = y10sh-y8sh;
  Y10Y11Diff = y11sh-y10sh;
run;
proc print data=HeightData;
  var habcid Y10Y11Diff y1sh y4sh y6sh y8sh y10sh pvsh1 pvsh2 pvsh3 pvsh4
y11sh;
  where Y10Y11Diff ne . and (Y10Y11Diff gt 12.7 or Y10Y11Diff lt -25.4);
  title2 "Y10 to Y11 height increase > 0.5 inch or decrease > 1 inch";
run;
proc export data=HeightData
  (keep = habcid y1sh y4sh y6sh y8sh y10sh y11sh Y1Y4Diff Y4Y6Diff Y6Y8Diff
Y8Y10Diff Y10Y11Diff)
   outfile="\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year
11\HeightData.xls"
   dbms=excel replace;
run;

** Weight difference between years;
data WeightData;
  merge calc (in=a)
        current.y1calc (keep = habcid y1wtk)
        current.y2calc (keep = habcid Y2WTK)
        current.y3calc (keep = habcid Y3WTK)
        current.y4calc (keep = habcid Y4WTK)
        current.y5calc (keep = habcid Y5WTK)
```

```
        current.y6calc (keep = habcid Y6WTK)
        current.y8calc (keep = habcid Y8WTK)
        current.y10calc (keep = habcid Y10WTK);
  by habcid;
  if a;
  Y1Y2Diff = y2Wtk - Y1Wtk;
  Y2Y3Diff = y3Wtk - Y2Wtk;
  Y3Y4Diff = y4Wtk - Y3Wtk;
  Y4Y5Diff = y5Wtk - Y4Wtk;
  Y5Y6Diff = y6Wtk - Y5Wtk;
  Y6Y8Diff = y8Wtk - Y6Wtk;
  Y8Y10Diff = y10Wtk - Y8Wtk;
  Y10Y11Diff = y11Wtk - Y10Wtk;
run;

proc print data=WeightData;
  var habcid Y10Y11Diff y1wtk y2wtk y3wtk y4wtk y5wtk y6wtk y8wtk y10wtk
y11wtk pwwtk pwwtk2;
  where abs(y10y11Diff) gt 10;
  title2 "Y10 to Y11 weight increase or loss of more than 25 pounds";
  format Y10Y11Diff y1wtk y2wtk y3wtk y4wtk y5wtk y6wtk y8wtk y10wtk y11wtk
pwwtk pwwtk2 8.1;
run;
proc export data=WeightData
  (keep = habcid y1wtk y2wtk y3wtk y4wtk y5wtk y6wtk y8wtk y10wtk y11wtk
   Y1Y2Diff Y2Y3Diff Y3Y4Diff Y4Y5Diff Y5Y6Diff Y6Y8Diff Y8Y10Diff
Y10Y11Diff)
   outfile="\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year
11\WeightData.xls"
   dbms=excel replace;
run;

%mend skip ;
```

Appendix VII
Ankle-Arm and Sitting Blood Pressure Calculated Variables

Investigator Name: Mikki Danielson

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
AAIR	Ankle-arm index, right leg	Average of two measurements of ratio between right tibial and right brachial systolic blood pressure	AAI1R=Y11AARP1/Y11AARB1 AAI2R=Y11AARP2/Y11AARB2 AAIR=(AAI1R+AAI2R)/2	If Y11AAPR = 0 then missing If one trial missing, use single measure for calculation	unitless
AAIL	Ankle-arm index, left leg	Average of two measurements of ratio between left tibial and right brachial systolic blood pressure	AAI1L=Y11AALP1/Y11AARB1 AAI2L=Y11AALP2/P2AARB2 AAIL=(AAI1L+AAI2L)/2	If Y11AAPR = 0 then missing If one trial missing, use single measure for calculation	unitless
MINAAI	Lowest ankle-arm index, right or left	Lower of left and right AAI, each measured twice and averaged)	MINAAI=lowest of either AAIR or AAIL	If right or left leg missing, use whichever leg is available	unitless
LOWAAI	Lower extremity arterial disease index	Lower extremity arterial disease group. Participants are categorized according to lowest AAI of either right or left w/ cutpoint of <0.90	LowAAI = 1 if MinAAI <0.90, 0 if MinAAI >=0.90	If Y11AAPR=0 then missing	unitless

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
SYSBP	Avg sitting systolic BP	Avg of two measurements of sitting systolic BP (mmHg)	SYSBP=Y11SYS		mm Hg
DIABP	Avg sitting diastolic BP	Avg of two measurements of sitting diastolic BP (mmHg)	DIABP=Y11DIA	If S6DIA <30, then set to 30	mm Hg

```
*************************************************************************
*  Saved as  \\Fu-hsing-c\HABC\HABC_SAS\Calculated Variables\Programs\Year
11\BP_Y11.sas
*
* Ase Sewall 11/30/2009 - Modified Year 4 program for use in Year 11
************************************************************************ ;
*DM LOG 'CLEAR' ; *DM OUTPUT 'CLEAR' ;

%include '\\Fu-hsing-c\habc\habc_sas\programs\initV8.sas';
libname calc '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year 11';

** temporary for testing;
*libname daf 'c:\temp';

*options ls=90 ps=56 formchar='|----|+|---+=|-/\<>*' nodate nofmterr mprint;



data bp;
  merge habc11.py(keep=habcid pysys pydia rename=(pysys=SYSBP pydia=DIABP))
        habc11.pz(keep=habcid pzaarp1 pzaarp2 pzaarb1 pzaarb2 pzaapr
                          pzaalp1 pzaalp2);
  by habcid;

  ** Blood Pressure (seated);
  label SYSBP='Avg sitting systolic BP, mm Hg'
        DIABP='Avg sitting diastolic BP, mm Hg';
  if DIABP<30 and DIABP>.z then DIABP=30;   /*5 cases in year 11*/

  **Ankle-arm Blood Pressure;
  label aair='Ankle-arm index, rt leg'
        aail='Ankle-arm index, lt leg'
        minaai='Lowest ankle-arm index'
        lowaai='Lower extr arterial dz index' ;

  /* right leg */
  AAI1R=PZAARP1/PZAARB1;
  AAI2R=PZaarp2/PZAARB2;
  if PZAAPR=0 then do;
     AAI1R=.;
     AAI2R=.;
  END;
  AAIR=(AAI1R+AAI2R)/2;
  if AAI1R=. THEN AAIR=AAI2R; ELSE
  IF AAI2R=. THEN AAIR=AAI1R;

  /* left leg */
  AAI1L=PZAALP1/PZAARB1;
  AAI2L=PZaalp2/PZAARB2;
  if PZAAPR=0 then do;
     AAI1L=.;
     AAI2L=.;
  END;
  AAIL=(AAI1L+AAI2L)/2;
  if AAI1L=. THEN AAIL=AAI2L; ELSE
  IF AAI2L=. THEN AAIL=AAI1L;
```

```
  /* minimum */
  MINAAI=MIN(AAIR,AAIL);
  if .z<MINAAI<0.90 THEN LOWAAI=1; ELSE
  if MINAAI>=0.90 THEN LOWAAI=0;
run;

/*
data duplicate;
  set bp;
  by habcid;
  if not(first.habcid and last.habcid);
run;
proc print data=duplicate;
  var habcid;
run;

proc print data=bp(obs=40);
  var AAI1R PZAARP1 PZAARB1 AAI2R PZAARP2 PZAARB2 PZAAPR aair;
  title2 "Ankle-arm index, right leg (sample print)";
run;
proc print data=bp(obs=40);
  var AAI1L PZAALP1 PZAARB1 AAI2L PZAALP2 PZAARB2 PZAAPR aail;
  title2 "Ankle-arm index, left leg (sample print)";
run;
proc print data=bp(obs=40);
  var AAIR AAIL MINAAI LOWAAI;
  title2 "Ankle-arm index, lowest (sample print)";
run;
proc print data=bp(obs=40);
  where PZaarb1<0 or PZaarb2<0 or PZaarp1<0 or PZaarp2<0;
  var PZAAPR aai1r PZaarp1 PZaarb1 aai2r PZaarp1 PZaarb2 aair;
  title2 "Ankle-arm index, right leg missing values (sample print)";
run;
proc print data=bp(obs=40);
  where PZaarb1<0 or PZaalp1<0 or PZaalp2<0 or PZaarb2<0;
  var PZAAPR aai1l PZaalp1 PZaarb1 aai2l PZaalp2 PZaarb2 aail;
  title2 "Ankle-arm index, left leg missing values (sample print)";
run;
proc print data=bp (obs=40);
  where aair<0 or aail<0;
  var minaai aair aail;
  title2 "Ankle-arm index, either missing (sample print)";
run;
proc print data=bp (obs=40);
  where PZaapr=0 and (pzaarp1 > 0 and pzaarp2 > 0 and pzaarb1 > 0 and
                      pzaarb2 > 0 and pzaalp1 > 0 and pzaalp2 > 0);
  var habcid PZAAPR lowaai minaai pzaarp1 pzaarp2 pzaarb1 pzaarb2 pzaalp1 pzaalp2;
  title2 "Ankle-arm index, test not completed (sample print)";
run;
*proc print data=habc11.pz (obs=100);
*  where habcid in(1842,2295);
*run;
proc print data=bp (obs=40);
  where minaai=0;
  var minaai aail aai1l aai2r PZaalp1 PZaarb1 PZaalp2 PZaarb2;
  title2 "Ankle-arm index, minimum value of zero (sample print)";
run;
```

```
*/

proc format;
  value lowaaif 1='Lowest AAI<0.90' 0='Lowest AAI>=0.90';
run;
data calc.y11bp;
  set bp(keep=habcid aair aail minaai lowaai sysbp diabp);
  format lowaai lowaaif.;
run;

/*
proc univariate data=calc.y11bp;
  var aair aail minaai sysbp diabp;
  title2 "Ankle-arm index: final values";
run;
proc sort data=calc.y11bp out=bp;
  by lowaai;
run;
proc univariate data=bp;
  by lowaai;
  var minaai;
run;
proc print data=habc11.pz;
  where pzaallta=-1 or pzaarlta=-1;
  id habcid;
  var pzaallta PZAARB1  PZAARP1  PZAALP1 pzaarlta  PZAALP2  PZAARP2  PZAARB2;
run;

proc contents data=calc.y11bp varnum;
run;

** compare with year 4;
libname calc1 '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year 1';
libname calc4 '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year 4';
data Y4Y11;
  set calc1.bp (in=a)
      calc4.y4bp (in=b)
      calc.y11bp (in=c);
  by habcid;
  if a then year=1;
  else if b then year=4;
  else if c then year=11;
  format _all_;
run;
proc summary data=y4y11 nway;
  class year;
  var aair aail minaai lowaai sysbp diabp;
  output out=n (drop = _type_ _freq_) n=;
run;
proc summary data=y4y11 nway;
  class year;
  var aair aail minaai lowaai sysbp diabp;
  output out=min (drop = _type_ _freq_) min=;
run;
proc summary data=y4y11 nway;
  class year;
  var aair aail minaai lowaai sysbp diabp;
```

```
  output out=mean (drop = _type_ _freq_) mean=;
run;
proc summary data=y4y11 nway;
  class year;
  var aair aail minaai lowaai sysbp diabp;
  output out=max (drop = _type_ _freq_) max=;
run;
data allstats;
  set n(in=a) min(in=b) mean(in=c) max(in=d);
  by year;
  if a then stat="N   ";
  else if b then stat="Min ";
  else if c then stat="Mean";
  else if d then stat="Max ";
run;

proc print data=allstats;
  title2 "1";
run;
proc transpose data=allstats out=allstats2;
  by year;
  id stat;
run;
proc sort data=allstats2;
  by _name_;
run;
proc print data=allstats2;
  by _name_ _label_;
  id _name_ _label_;
  title2 "Ankle-arm index: final values";
run;


*/
```

Appendix VIII
Performance Measure Calculated Variables

Investigator Name:Eleanor Simonsick

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
ABLE5CS	Did 5 chair stands	Indicator variable for able to do 5 chair stands. The scoring algorithm sets ABLE5CS to 0 if repeated stands were completed, but single chair stand coded as "rises using arms"	If single chair stand missing or refused and repeated stands are also missing, or if no suitable chair was available, or participant refused the single chair stand, then ABLE5CS is missing. If single chair is not attempted/unable, attempted and unable, or rises using arms, then ABLE5CS=0. If complete single stand, but not attempted/unable, refused, or unable to complete 5 stands, then ABLE5CS=0. If able to complete both single stand and 5 repeated stands, then ABLE5CS=1.		0=No 1=Yes
CHR5PACE	Chair stands per second	Chair stands per second	CHR5PACE=5 divided by the time to do 5 stands (in seconds) rounded to 1 decimal	If ABLE5CS=0 then CHR5PACE=0	sec^{-1}

CAT5CS	EPESE score for chair stands		Round time for 5 stands to nearest decimal
			if ABLE5CS=0 then CAT5CS=0;
			if ABLE5CS=1 then:
			if time $\geq$16.7 then CAT5CS=1;
			if 13.7 $\leq$ time $\leq$ 16.6 then CAT5CS=2;
			if 11.2 $\leq$ time $\leq$ 13.6 then CAT5CS=3;
			if time $\leq$ 11.1 then CAT5CS=4
				If ABLE5CS=1 and time <0 then CAT5CS=.	Scale from 0 (worst performance) to 4 (best performance)

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
SBSCORE	EPESE score for standing balance	EPESE categorical score for summary of standing balance results. The scoring algorithm reflects the EPESE administration procedure in which those who could not hold the semi-tandem stand for 10 seconds should not have moved on to the full tandem stand (even if they did have data for that test)	If refused or attempted/unable to do semi-tandem stand, or unable to hold for at least 1 second, then STSCORE=0. If holds for 1 to <10 seconds, then STSCORE=1. If at least 10 seconds, then STSCORE=2. Better of two tandem-stand trials is used. If refused or attempted/unable to do tandem stand, or unable to hold for at least 3 second then FTSCORE=0. If holds for 3 to <10 seconds, then FTSCORE=1. If at least 10 seconds then FTSCORE=2. If STSCORE in (0,1) then FTSCORE=0. SBSCORE=STSCORE + FTSCORE	**If semi-tandem marked as holds for less than 30 seconds, but time is missing, assume held less than 10 seconds (STSCORE=1).** **If STSCORE is missing and tandem stand held for at least 10 seconds, then assume semi-tandem held for 30 (STSCORE=2)** If semi-tandem is refused or unable then STSCORE=0 If tandem is refused or unable then FTSCORE=0	sec

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
FSBTIME	Full standing balance test time 0-90	Total time of all stands. Those who could not hold the full tandem stand for 30 seconds were not supposed to be administered the one-leg stand so they were assigned 0 seconds for one-leg stand.	If STSCORE=0 then STTIME=0 If Y11STS=3 then STTIME=30 If Y11STS=2 then STTIME=Y11STSTM If STSCORE=0 then FTTIME=0 If Y11TS1=3 or Y11TS2=3, then FTTIME=30, otherwise FTTIME =max(Y11TSTM , Y11TS2TM). Otherwise if FTSCORE=0 then FTTIME=0. **If semi-tandem scored as "Holds position between 1 and 29 seconds" and semi-tandem time is missing, use tandem time for semi-tandem time.** If Y11TR1=3 or Y11TR2=3 then OLTIME=30. Otherwise, OLTIME=max(Y11TR1TM, Y11TR2TM). Otherwise OLTIME=0. If 0 < FTTIME < 30.00 then OLTIME=0. if STTIME=**0** or FTTIME=**0** then OLTIME=**0**. Round each balance time to two decimals FSBTIME=STTIME + FTTIME + OLTIME	If one-leg stand is refused or unable then OLTIME=0	sec
DID6MUW	Did 6-meter usual walk	Indicator variable for 6-meter usual walk (clinic visit only).	If steps or time is non-missing for the usual pace walk, then DID6MUW=1. Otherwise, if the walk was not attempted/ unable or attempted and unable to complete, then DID6MUW=0.	If home or proxy visit (no 6-meter walk component), DID6MUW=. If walk is missing or refused, then DID6MUW=.	0=No 1=Yes

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
SIXMWTM	Time to walk 6m	The fastest of the two trials for the usual walk	SIXMWTM=minimum of non-missing usual walk times from two trials (for home and proxy home visits, a temporary variable, not kept, called Y11UWTM is created in the same way for the 3- or 4-meter walk)	If DID6MUW=0 or missing, SIXMWTM is missing	sec
Y11UWPACE	Walking speed (m/sec) over 3, 4 or 6m	Walking speed (m/sec) over 3,4 or 6m, using fastest trial	Divide SIXMWTM (or Y11UWTM) by number of meters walked (3, 4, or 6) and round to 2 decimals	If usual pace walk attempted/unable or attempted and unable to complete then Y11UWPACE=0	m/sec
Y11UWSCR	EPESE categories for walking speed	EPESE categories for usual walking speed, using fastest trial	If SIXMWTM (or Y11UWTM)=0 then Y11UWSCR=0; if 0 < Y11UWPACE≤ .46 then Y11UWSCR=1; if .47 ≤ Y11UWPACE≤ .64 then Y11UWSCR=2; if .65 ≤ Y11UWPACE≤ .82 then Y11UWSCR=3; if Y11UWPACE≥.83 then Y11UWSCR=4		Scale from 0 (worst performance) to 4 (best performance)
EPESEPPB	EPESE performance battery score 0-12	EPESE performance battery score 0-12**	EPESEPPB=Y11UWSCR+ CAT5CS + SBSCORE	If any of the component scales is missing, then EPESEPPB is missing	Scale from 0 (worst) to 12 (best performance)
DID6MNW	Did 6m narrow walk	Indicator variable for 6m narrow walk.	If DID6MUW=. then DID6MNW=. if DID6MUW=0 then DID6MNW=0; If attempted / unable to do the narrow walk then DID6MNW=0 If all attempted trials strayed outside the lines, then DID6MNW=0. if any of three trials stayed within bounds, then DID6MNW=1.	If a participant did the usual 6 meter walk, but did not attempt or refused the narrow (7), they were coded as unable (0)	0=No 1=Yes

**The scoring algorithm reflects the EPESE administration procedure in which those who could not hold the semi-tandem stand for 10 seconds did not move on to the full tandem stand. This is not how the examiners were instructed to administer the exam, however, so a number of participants had full-tandem stand data who did not hold the semi-tandem stand for 10 seconds

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
NWTIME	Time to walk a 20cm wide 6m course	Time to walk a 20cm wide 6m course. Uses the fastest of three trials	NWTIME = minimum time from acceptable trial(s)	If DID6MNW=0 or missing, NWTIME is missing	Sec
NWPACE	Walking speed for narrow 6m walk	Walking speed (m/sec) over 6m narrow walk, using fastest trial	NWPACE = 6/NWTIME rounded to 2 decimals	If DID6MNW=0 then NWPACE=0	m/sec
NWSCORE	EPESE category for narrow walk	EPESE categories for narrow walk, using fastest trial	If DID6MNW=0 then NWSCORE=0; if 0 < NWPACE ≤ .46 then NWSCORE=1; if .47 ≤ NWPACE ≤ .64 then NWSCORE=2; if .65 ≤ NWPACE ≤ .82 then NWSCORE=3; if NWPACE ≥.83 then NWSCORE=4		Scale from 0 (worst performance) to 4 (best performance)

NWSCOREQ	% difference between narrow pace & usual walk pace	Categories based on percent difference between Y11UWPACE and NWPACE	PACEDIFF=Y11UWPACE-NWPACE;
			PCPACEDF=round(100*PACEDIFF/Y11UWPACE, .01);
			if PCPACEDF > 15 then NWSCOREQ=1;
			if 15 ≥ PCPACEDF > 5 then NWSCOREQ=2;
			if 5 ≥PCPACEDF ≥-5 then NWSCOREQ=3;
			if .z<PCPACEDF < -5 then NWSCOREQ=4;
				If DID6MNW=. then NWSCOREQ=.
				
				if DID6MNW=0 then NWSCOREQ=.
				
				if DID6MUW=0 and DID6MNW=0 then NWSCORE=.
					%

Note all performances except for the standing balance measures were converted to pace (meters/sec or chair stands/sec)to allow those unable to do a test to be coded 0. It was difficult to determine whether the 7:Not attempted/refused were not administered a test or if they refused or did not attempt a test because of a physical problem.

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
CSRATIO	Chair stands performance ratio using a modification of the MacArthur approach***	A summary scale of chair stand performance. 1 chair stand per second was used for the denominator	CSRATIO=round(CHR5PACE/1, .01); if CSRATIO > 1 then CSRATIO=1	Chair stand performances was converted to pace - chair stands/sec - to allow those unable to do a test to be coded 0;	unitless
FSBRATIO	Standing balance performance ratio using a modification of the MacArthur approach***	A summary scale of standing balance performance. 90 seconds (total time for all three stands) was used for the denominator	FSBRATIO= FSBTIME/90 rounded to 2 decimals	If FSBTIME is missing, then FSBRATIO is missing	unitless
Y11UWRATIO	Usual walk performance ratio using a modification of the MacArthur approach ***	A summary scale of usual walk performance. 2 m/sec was used for the denominator	Y11UWRATIO=round(Y11UWPACE/2, .01) if Y11UWRATIO>1 then Y11UWRATIO=1	Usual walk performances was converted to pace - meters/sec - to allow those unable to do a test to be coded 0;	unitless
NWRATIO	Narrow walk performance ratio using a modification of the MacArthur approach ***	A summary scale of 6 meter narrow walk performance. 2 m/sec was used for the denominator	NWRATIO=round(NWPACE/2, .01); if NWRATIO > 1 then NWRATIO=1	Narrow walk performances was converted to pace - meters/sec - to allow those unable to do a test to be coded 0;	unitless

***Seeman et al. J Gerontol Med Sci 1994(49)M97-M108). With the MacArthur data, the 99th percentile was used as the denominator and scores above the 99th percentile were set to equal the 99th percentile. Here, the maximum attainable performance within an older cohort as used as the denominator.

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
HABCPPB	Health ABC performance score 0-4	Summary measure combining usual walk, narrow walk, chair stand, and standing balance performance ratios	HABCPPB= FSBRATIO+CSRATIO+Y11UWRATIO+ NWRATIO	If any of the component scales is missing, then HABCPPB is missing	Scale from 0 (worst) to 4 (best performance)
PPB12CAT *****NOT FOR USE OTHER THAN FOR COMPARI-SON TO EPESEPPB** (use EPESEPPB or HABCPPB)	Categorical scoring of HABCPPB 0-12	Categories of HABCPPB (summary measure combining usual walk, narrow walk, chair stand, and standing balance performance ratios)	If HABCPPB > 3.66 then PPB12CAT=12; If 3.33 lt HABCPPB < 3.66 then PPB12CAT=11; If 3.0 < HABCPPB ≤ 3.33 then PPB12CAT=10; If 2.66 < HABCPPB ≤ 3.0 then PPB12CAT=9; If 2.33 < HABCPPB ≤ 2.66 then PPB12CAT=8; If 2.0 < HABCPPB ≤ 2.33 then PPB12CAT=7; If 1.66 < HABCPPB ≤ 2.0 then PPB12CAT=6; If 1.33 < HABCPPB ≤ 1.66 then PPB12CAT=5; If 1.0 < HABCPPB ≤ 1.33 then PPB12CAT=4; If 0.66 < HABCPPB ≤ 1.0 then PPB12CAT=3; If 0.33 < HABCPPB ≤ 0.66 then PPB12CAT=2; If 0.0 < HABCPPB ≤ 0.33 then PPB12CAT=1; If HABCPPB = 0 then PPB12CAT=0;	If HABCPPB is missing, then PPB12CAT is missing	Scale from 0 (worst performance) to 12 (best performance)

```
/*******************************************************************************
******************
* Program Name:  Perform_Y11.sas
* Saved as:      \\Fu-hsing-c\habc\habc_sas\Calculated Variables\Programs\Year
11\Perform_Y11.sas
* Study:         HABC
* Purpose:       Creates calculated variables for Year 11 for
*                  Standing Balance, Balance Walks, and Chair Stand
* Input:         Y11visit
* Output:        Y11perfm
* Programmer:    Ase Sewall (in coordination with Emily Kenyon)
* Date:          July 11, 2009
* Comments:      Consolidate and reconciled differences in various sets of code
*                  (Consultation from Eleanor Simonsick)
*******************************************************************************
******************/;

options mprint;

%include '\\Fu-hsing-c\HABC\HABC_SAS\Programs\initV8.sas';
libname calc '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year 11';

title "Performance measures for Year 11";

*Set macro variable to use perfm_macros.sas;
%let _progpath=\\fu-hsing-c\habc\habc_sas\;
%let Y=Y11;
%let pre=Y11;
%let hpre=Y11;

/*
proc print data=daf.y11visit;
   where .z<Y11uptm1<3 or
         .z<Y11uptm2<3 or
         .z<Y1120ct1<2 or
         .z<Y1120ct2<2 or
         .z<Y1120ct3<2;
   var habcid Y11scs Y11rcs Y11sec Y11sts Y11ststm Y11ts2 Y11ts1 Y11ts2tm Y11tstm
                    Y11tr1 Y11tr2 Y11tr1tm Y11tr2tm
                    Y11uptm1 Y11up1 Y11upru1 Y11uptm2 Y11up2 Y11upru2
                    Y1120cna Y1120tr1 Y1120ct1 Y1120tr2 Y1120ct2 Y1120tr3 Y1120ct3
                    Y114mwtm1 Y114mw1 Y114mwtm2 Y114mw visitype;
run;
*/

*****--------- Standardize variable names for all years-------*****;
data visit (keep=habcid scs rcs sec sts ststm ts2 ts1 ts2tm tstm
                    tr1 tr2 tr1tm tr2tm
                    Y11uptm1 Y11up1 Y11upru1 Y11uptm2 Y11up2 Y11upru2
                    Y1120cna Y1120tr1 Y1120ct1 Y1120tr2 Y1120ct2 Y1120tr3 Y1120ct3
                    Y114mwtm1 Y114mw1 Y114mwtm2 Y114mw visitype source);
  set daf.Y11visit (rename=(Y11scs=scs Y11rcs=rcs Y11sec=sec
    Y11sts=sts Y11ststm=ststm Y11ts1=ts1 Y11tstm=tstm Y11ts2=ts2 Y11ts2tm=ts2tm
    Y11tr1=tr1 Y11tr1tm=tr1tm Y11tr2=tr2 Y11tr2tm=tr2tm ));

  *where visitype in (0,1,6,11);

  if visitype in (0,11) then Source="V";
  else if visitype in (1,6) then Source="H";

  *Fix a few impossible value by setting them to missing, so other value used;
        if .z<Y11uptm1<3 then Y11uptm1=.;
        if .z<Y11uptm2<3 then Y11uptm2=.;
```

```
        if .z<Y1120ct1<2 then Y1120ct1=.;
        if .z<Y1120ct2<2 then Y1120ct2=.;
        if .z<Y1120ct3<2 then Y1120ct3=.;
run;



%macro perfm;
data Perf_&Y;
  set visit;


  ***** Standing Balance *****;

    *--- (1) Semi-tandem score;
    if STS in (7,9) then STSCORE=0; *Refused attempted/unable;
      else if STS<0 and STSTM<0 then STSCORE=.;
      else if (STS<0 and 0<STSTM < 1) or STS=1 then STSCORE=0; *Holds position for less than one second;
          else if (STS=2 and STSTM<0 and (TS1=3 or TS2=3 or TSTM>0 or TS2TM>0)) then do;*Assumes ST time at least as
good as FT;
                if TS1=3 or TS2=3 then STSTM=30;
                else STSTM=max(TSTM,TS2TM);
          end;
    if (STS=2 or STS<0) and 0<STSTM<10 then STSCORE=1; *Holds position for less than 10 seconds;
      else if STS=2 and STSTM<0 then STSCORE=1; *If less than 30 sec and time missing, assume less than 10 sec;
      else if STS=3 or ((STS=2 or STS<0)and STSTM ge 10) then STSCORE=2; *Holds position for at least 10 seconds;

    *--- (2) Full-tandem score (1st attempt);
    if TS1 in (7,9) then FT1=0; *Refused attempted/unable;
      else if TS1<0 and TSTM<0 then FT1=.;
      else if (TS1<0 and 0<TSTM<1) or TS1=1 then FT1=0; *Holds position for less than one second;
      else if (TS1=2 or TS1<0) and TSTM<10 then FT1=1; *Holds position for less than 10 seconds (assumes missing time
means less than 10 sec);
      else if TS1=3 or ((TS1=2 or TS1<0) and TSTM ge 10) then FT1=2; *Holds position for at least 10 seconds;
          if (ts1=1 or (ts1=2 and 0 le tstm lt 3)) then FT1=0;*Full-tandem < 3 seconds;
    *--- (3) Full-tandem score (2nd attempt);
    if TS2 in (7,9)then FT2=0; *Refused attempted/unable;
      else if TS2<0 and TS2TM<0 then FT2=.;
      else if (TS2<0 and 0<TS2TM<1) or TS2=1 then FT2=0; *Holds position for less than one second;
     else if (TS2=2 or TS2<0) and TS2TM<10 then FT2=1; *Holds position for less than 10 seconds (assumes missing time
means less than 10 sec);
      else if TS2=3 or ((TS2=2 or TS2<0) and TS2TM ge 10) then FT2=2; *Holds position for at least 10 seconds;
      if (ts2=1 or (ts2=2 and 0 le ts2tm lt 3)) then FT2=0;
  FTSCORE=max(FT1,FT2); *Full-tandem score is better of two tries;

    *--- (4)  Combined standing balance scores;
    if STSCORE in (0,1) then FTSCORE=0; *Should not go on to full-tandem if unable to hold semi-tandem for 10
seconds;
    if STSCORE=. and FTSCORE>0 then STSCORE=2 ;*If semi-tandem test missing and full-tandem exists, then assume
completed at least 10 seconds on semi-tandem

    *--- (5)  Final standing balance score;
    label SBSCORE  ="EPESE SCORE FOR STANDING BALANCE";
    SBSCORE=STSCORE+FTSCORE;

    *--- (6) For debug print only;
    if 0 lt ststm lt 10 then STimelt10="<10";


  ***** Chair stands *****;

    label ABLE5CS  ="DID 5 CHAIR STANDS YES=1";
    IF (SCS=.M AND RCS=.A) OR (SCS=7 AND (RCS=.A OR RCS=.E)) THEN ABLE5CS=.;
      else IF SCS=1 THEN ABLE5CS=0;
      else IF SCS=2 AND (RCS=1 OR RCS=7 or RCS=9) THEN ABLE5CS=0;
      else IF SCS=9 THEN ABLE5CS=0;
      else IF SCS=3 THEN ABLE5CS=.;
      else IF SCS=0 THEN ABLE5CS=0;
      else IF SCS NE 1 AND RCS=2 THEN ABLE5CS=1;
      else IF SCS=7 THEN ABLE5CS=.;
      else IF SCS=2 AND RCS=2 THEN ABLE5CS=1;

    label CAT5CS ="EPESE SCORE FOR CHAIR STANDS";
    RSEC=ROUND(SEC, .1);
    IF ABLE5CS=0 THEN CAT5CS=0;
    else IF ABLE5CS=1 then do;
```

```
      IF RSEC GE 16.7 THEN CAT5CS=1;
      IF 13.7 LE RSEC LE 16.6 THEN CAT5CS=2;
      IF 11.2 LE RSEC LE 13.6 THEN CAT5CS=3;
      IF 0<RSEC LE 11.1 THEN CAT5CS=4;
        else if RSEC lt 0 then CAT5CS=.;
    end;

    label CHR5PACE ="CHAIR STANDS PER SECOND";
    CHR5PACE=ROUND(5/SEC, .01);
    IF ABLE5CS=0 THEN CHR5PACE=0;

    label CSRATIO  ="CHAIR STANDS PERFORMANCE RATIO";
    CSRATIO=ROUND(CHR5PACE/1, .01); IF CSRATIO GT 1 THEN CSRATIO=1;

    **Total seconds to examine full standing balance assessment and create a score
        from 0 to 90 - total time of all stands;

    *--- (1) semi-tandem time;
    IF STSCORE=0 THEN STTIME=0;
    else do;
     IF STS=3 THEN STTIME=30;
     IF STS=2 THEN STTIME=STSTM;
     IF (STS=2 AND STSTM=.M) AND TS1=2 THEN STTIME=TSTM;
     IF (STS=2 AND STSTM=.M) AND (TS1=3 OR TS2=3) THEN STTIME=30;
    end;
    STTIME=ROUND(STTIME, .01);

    *--- (2) full-tandem time;
    if STSCORE in (0,1) then FTTIME=0;
      else IF TS1=3 OR TS2=3 THEN FTTIME=30;
      else IF TS1=2 or TS2=2 THEN FTTIME=MAX(TSTM, TS2TM);
          else if FTSCORE=0 then FTTIME=0;
*New code to try to be more consistent;
        if FTSCORE>0 and STTIME<0 then STTIME=FTTIME;
    *--- (3) one-leg stand;
    if tr1=3 or tr2=3  then OLTIME=30;
      else OLTIME=MAX(Tr1TM, Tr2TM);
        if FTTIME<0 and OLTIME>0 then FTTIME=OLTIME;
          if OLTIME<0 and (tr1 in (7,9) or (tr1=1 and tr2 in (7,9,1,.M))) then OLTIME=0;*new;
    if STTIME=0 or FTTIME=0 then OLTIME=0;
    if 0 lt FTTIME lt 30 then OLTIME=0;

    *--- (4) combined time for all three stands;
    label  FSBTIME  ="Standing Balance Test Time (0-90)"
           FSBRATIO ="Standing Balance Time Ratio";
    FSBTIME=STTIME + FTTIME + OLTIME;
    FSBRATIO=round(FSBTIME/90, .01);

%if (&Y=Y1 or &Y=Y4 or &Y=Y6 or &Y=Y11 or &Y=Y11) %then %do;
  ***** Balance walks *****;

    **Balance walk (6 Meter and Narrow);
    /* Code to compute EPESE categorical score for the measured walk. It
      is difficult to determine whether the 7s were not administered a test
      of if they refused/did not attempt a test b/c a physical problem.
      The INYN variable used in Y1 is not avail in other years*/;

    *--- (Usual walk);

    ***DID6MUW (Did  usual walk);
    LABEL DID6MUW  ="DID 6M USUAL WALK YES=1";
        if Source="V" then do;
      IF &pre.UP1>0 or &pre.uptm1 gt .Z then DID&Y.UW=1;
      else IF &pre.UPRU1<=.z THEN DID&Y.UW=.;
      else if &pre.UPRU1=9 THEN DID&Y.UW=0;
      else IF &pre.UPRU1=7 THEN DID&Y.UW=.;
          DID6MUW=DID&Y.UW;
        end;
%if (&Y ne Y1) %then %do;
    if Source="H" then do;
      if (&hpre.4mwtm1 ge 0 and &hpre.4mwtm2 ge 0) then DID&Y.UW=1;
       else if &hpre.4mw1=9 or &hpre.4mw1=1 then DID&Y.UW=0;
    end;
%end;
        %if (&Y=Y2 or &Y=Y3 or &Y=Y4 or &Y=Y5 or &Y=Y6 or &Y=Y8) %then %do;
        if Source="P" then do;
      if (yc4mwtm1 ge 0 and yc4mwtm2 ge 0) then DID&Y.UW=1;
```

```
      else if yc4mw1=9 or yc4mw1=1 then DID&Y.UW=0;
    end;
%end;
    ***SIXMWTM (Time for 6m usual walk);

        if Source="V" then do;
      IF &pre.UPTM1 > 0 AND &pre.UPTM2 > 0 THEN &Y.UWTM=MIN(&pre.UPTM1, &pre.UPTM2);
          else if &pre.uptm1 lt 0 and &pre.uptm2 ge 0 then &Y.UWTM=&pre.uptm2;
          else if &pre.uptm1 ge 0 and &pre.uptm2 lt 0 then &Y.UWTM=&pre.uptm1;
          SIXMWTM=&Y.UWTM;
        label SIXMWTM  ="TIME TO WALK  6M";
        end;
        %if (&Y ne Y1) %then %do;
    if Source="H" then do;
      if (&hpre.4mwtm1 ge 0 and &hpre.4mwtm2 ge 0) then &Y.UWTM=min(&hpre.4mwtm1, &hpre.4mwtm2);
      else if &hpre.4mwtm1 lt 0 and &hpre.4mwtm2 ge 0 then &Y.UWTM=&hpre.4mwtm2;
      else if &hpre.4mwtm1 ge 0 and &hpre.4mwtm2 lt 0 then &Y.UWTM=&hpre.4mwtm1;
    end;
        %end;
        %if (&Y=Y2 or &Y=Y3 or &Y=Y4 or &Y=Y5 or &Y=Y6 or &Y=Y8) %then %do;
    else if Source="P" then do;
      if (yc4mwtm1 ge 0 and yc4mwtm2 ge 0) then &Y.UWTM=min(yc4mwtm1, yc4mwtm2);
      else if yc4mwtm1 lt 0 and yc4mwtm2 ge 0 then &Y.UWTM=yc4mwtm2;
      else if yc4mwtm1 ge 0 and yc4mwtm2 lt 0 then &Y.UWTM=yc4mwtm1;
    end;
        %end;
    ***&Y.UWPACE (pace for usual walk);
    label &Y.UWPACE ="WALKING SPEED (M/SEC) OVER 3,4, or 6M";
        if Source="V" then do;
      &Y.UWPACE=ROUND(6/&Y.UWTM, .01);
      IF DID&Y.UW=0 THEN &Y.UWPACE=0;
        end;
        %if (&Y ne Y1) %then %do;
    if Source="H" then do;
      if &hpre.4mw=1 then &Y.UWPACE=round(4/&Y.UWTM, .01);
      if &hpre.4mw=2 then &Y.UWPACE=round(3/&Y.UWTM, .01);
    end;
        %end;
        %if (&Y=Y2 or &Y=Y3 or &Y=Y4 or &Y=Y5 or &Y=Y6 or &Y=Y8) %then %do;
    else if Source="P" then do;
      if yc4mw=1 then &Y.UWPACE=round(4/&Y.UWTM, .01);
      if yc4mw=2 then &Y.UWPACE=round(3/&Y.UWTM, .01);
    end;
        %end;
        ***&Y.UWSCR (Score for usual walk);
    label &Y.UWSCR  ="EPESE SCORE FOR WALKING SPEED";
    IF DID&Y.UW=0 THEN &Y.UWSCR=0;
      else IF 0 LT &Y.UWPACE LE .46 THEN &Y.UWSCR=1;
      else IF .47 LE &Y.UWPACE LE .64 THEN &Y.UWSCR=2;
      else IF .65 LE &Y.UWPACE LE .82 THEN &Y.UWSCR=3;
      else IF &Y.UWPACE GE .83 THEN &Y.UWSCR=4;

    ***&Y.UWRATIO (Ratio usual walk;
    label &Y.UWRATIO ="USUAL WALK PERFORMANCE RATIO";
    &Y.UWRATIO=ROUND(&Y.UWPACE/2, .01);*2 m/sec is considered fastest attainable pace in this age group;
    IF &Y.UWRATIO GT 1 THEN &Y.UWRATIO=1;

    *--- (20cm narrow walk);

    ***DID6MNW (Did 20cm narrow walk);
    label DID6MNW ="DID 6M NARROW WALK YES=1";
    IF DID&Y.UW=. THEN DID6MNW=.;
    else if DID6MUW=0 THEN DID6MNW=0;

else IF &pre.20TR1=0 AND &pre.20TR2=0 AND &pre.20TR3 < 1 THEN DID6MNW=0;
    IF &pre.20CNA in (0,9) THEN DID6MNW=0;*One version of the form coded not attempted/unable as 0;
      else IF DID6MUW=1 AND &pre.20CNA=7 THEN DID6MNW=0;
      else IF &pre.20TR1=1 OR &pre.20TR2=1 OR &pre.20TR3=1 THEN DID6MNW=1;

    ***NWTIME***;
    label NWTIME ="TIME TO WALK A 20CM WIDE 6M COURSE";
    IF (&pre.20TR1=1 AND &pre.20CT1>0) THEN VT1T=1;
      ELSE VT1T=0;
    IF (&pre.20TR2=1 AND &pre.20CT2>0) THEN VT2T=1;
      ELSE VT2T=0;
    IF &pre.20TR3=1 AND &pre.20CT3>0 THEN VT3T=1;
      ELSE VT3T=0;
```

```
    IF DID6MNW=1 THEN DO;
    IF VT1T=1 AND VT2T=0 AND VT3T=0 THEN NWTIME=&pre.20CT1;
      else IF VT1T=0 AND VT2T=1 AND VT3T=0 THEN NWTIME=&pre.20CT2;
      else IF VT1T=0 AND VT2T=0 AND VT3T=1 THEN NWTIME=&pre.20CT3;
      else IF VT1T=1 AND VT2T=1 AND VT3T=0 THEN NWTIME=MIN(&pre.20CT1, &pre.20CT2);
      else IF VT1T=1 AND VT2T=0 AND VT3T=1 THEN NWTIME=MIN(&pre.20CT1, &pre.20CT3);
      else IF VT1T=0 AND VT2T=1 AND VT3T=1 THEN NWTIME=MIN(&pre.20CT2, &pre.20CT3);
      else IF VT1T=1 AND VT2T=1 AND VT3T=1 THEN NWTIME=MIN(&pre.20CT1, &pre.20CT2, &pre.20CT3);
    END;

    ***NWPACE***;
    label NWPACE="WALKING SPEED FOR NARROW WALK 6M";
    NWPACE=ROUND(6/NWTIME, .01);
    IF DID6MNW=0 THEN NWPACE=0;

    ***NWSCORE***;
    label NWSCORE ="EPESE CATEGORY FOR NARROW WALK";
    IF DID6MNW=0 THEN NWSCORE=0;
      else IF 0 LT NWPACE LE .46 THEN NWSCORE=1;
      else IF .47 LE NWPACE LE .64 THEN NWSCORE=2;
      else IF .65 LE NWPACE LE .82 THEN NWSCORE=3;
      else IF NWPACE GE .83 THEN NWSCORE=4;

    ***NWRATIO***;
    label NWRATIO  ="NARROW WALK PERFORMANCE RATIO";
    NWRATIO=ROUND(NWPACE/2, .01);
    IF NWRATIO GT 1 THEN NWRATIO=1;

    *--- (Comparison between 6M Usual walk 20cm Narrow walk);

    if &Y.UWPACE gt 0 and nwpace gt 0 then do;            /* Added by Ase, changed to ge by Emily */
      ***Pace Difference;
      PACEDIFF=&Y.UWPACE-NWPACE;
      PCPACEDF=ROUND(100*PACEDIFF/&Y.UWPACE, .01);

      ***NWSCOREQ (Categories based on percent difference in pace);
      label NWSCOREQ ="% DIFF BTW NARROW & USUAL WALKS";
      IF PCPACEDF GT 15 THEN NWSCOREQ=1;
        else IF 15 GE PCPACEDF GT 5 THEN NWSCOREQ=2;
        else IF 5 GE PCPACEDF GE -5 THEN NWSCOREQ=3;
        else IF .Z <PCPACEDF LT -5 THEN NWSCOREQ=4;      /* Corrected by Ase */
        else IF DID6MNW=0 THEN NWSCOREQ=0;
        else IF DID6MNW=. THEN NWSCOREQ=.;
    end;

  ***** Summary Performance Scores *****;

    *--- EPESEPPB;
    label EPESEPPB="EPESE performance battery score 0-12";
    EPESEPPB=&Y.UWSCR + CAT5CS + SBSCORE;


    *---HABCPPB;
    label HABCPPB="Health ABC performance score 0-4";
    HABCPPB=FSBRATIO + CSRATIO + &Y.UWRATIO + NWRATIO;


    *---PPB12CAT;
    *THIS CODE CREATES 12 CATEGORIES OF THE CONTINUOUS HABCPPB SCORE;
    label PPB12CAT="Categorical scoring of HABCPPB 0-12";
    IF HABCPPB GT 3.66 THEN PPB12CAT=12;
    IF 3.33 LT HABCPPB LE 3.66 THEN PPB12CAT=11;
    IF 3.0 LT HABCPPB LE 3.33 THEN PPB12CAT=10;
    IF 2.66 LT HABCPPB LE 3.0 THEN PPB12CAT=9;
    IF 2.33 LT HABCPPB LE 2.66 THEN PPB12CAT=8;
    IF 2.0 LT HABCPPB LE 2.33 THEN PPB12CAT=7;
    IF 1.66 LT HABCPPB LE 2.0 THEN PPB12CAT=6;
    IF 1.33 LT HABCPPB LE 1.66 THEN PPB12CAT=5;
    IF 1.0 LT HABCPPB LE 1.33 THEN PPB12CAT=4;
    IF 0.66 LT HABCPPB LE 1.0 THEN PPB12CAT=3;
    IF 0.33 LT HABCPPB LE 0.66 THEN PPB12CAT=2;
    IF 0.0 LT HABCPPB LE 0.33 THEN PPB12CAT=1;
    IF HABCPPB = 0 THEN PPB12CAT=0;
%end;
format _all_;

run;
```

```
*This is all just QC code;
*****-------------------------- Formats ----------------------------------*****;
** standing balance score formats;
proc format;
  value result
    .M = "M"
    .N = "N"
    .A = "A"
    7 = "7=ref"
    9 = "9=una"
    1 = "1=<1"
    2 = "2=1-<30"
    3 = "3=30+";
  value sec_a
    .M = "M"
    .N = "N"
    .A = "A"
    1-<3 = "< 3"
    3-<10 = "3-<10"
    10-<30 = "10-<30";
  value sec_b
    .M = "M"
    .N = "N"
    .A = "A"
    0 = "0"
    1-<10 = "<10"
    10-<30 = "10-<30";
  value sec_e
    0 = "0"
    1-<30 = "<30"
    30 = "30";
  value sec_f
    0 = "0"
    1-30 = "1-30"
    30<-60 = "31-60"
    60<-90 = "61-90";
  value ratio
    0.0 = "0.0"
    .01-.33 = ".01-.33"
    .34-.67 = ".34-.67"
    .68-.99 = ".68-.99"
    1.00 = "1.00";
run;
%macro skip;
** chair stand formats;
proc format;
  value sec_c
    1-11.1 = "1-11.1"
    11.2-13.6 = "11.2-13.6"
    13.7-16.6 = "13.7-16.6"
    16.7-35 = "16.7-35"
    35<-high = ">35";
  value sec_d
    1-high = "1+";
  value pace
    0 = "0"
    0<-high = ">0";
run;

** Walking formats;
proc format;
  value walk_sec
    1.0-50.0 = "1.0-50.0";
  value walk_pace
            0 = "0"
    0<-0.46 = "<0.46"
    .47-.64 = "0.47-0.64"
    .65-.82 = "0.65-0.82"
    .83-high= "0.83+";
  value walk_pacex
            0 = "0"
    0<-high = ">0";
  value walk_steps
    1-30 = "1-30";
  value walk_ratio
            0 = "0"
    0<-0.23 = "<0.23"
```

```
    .24-.32 = "0.24-0.32"
    .33-.41 = "0.33-0.41"
    .42-high= "0.42+";
  value pace_diff
    low-<0  = "<0"
          0 = "0"
    0<-<100 = ">0 - <100"
    100     = "100";
  value pcpace_diff
    15<-high = "> 15"
    5<-15 = ">5 to 15"
    -5-5 = ">-5 to 5"
    low-<-5 = "<-5";
  value pace_ratio
    0 = "0"
    0<-<1 = ">0 to <1.0"
    1 = "1.0";
run;

** Performance formats;
proc format;
  value perf_ratio
    0 = "0"
    0<-1 = ">0";
  value HABCPPB
    0 = "0"
    0.00<-0.33 = "> 0.00 to 0.33"
    0.33<-0.66 = "> 0.33 to 0.66"
    0.66<-1.00 = "> 0.66 to 1.00"
    1.00<-1.33 = "> 1.00 to 1.33"
    1.33<-1.66 = "> 1.33 to 1.66"
    1.66<-2.00 = "> 1.66 to 2.00"
    2.00<-2.33 = "> 2.00 to 2.33"
    2.33<-2.66 = "> 2.33 to 2.66"
    2.66<-3.00 = "> 2.66 to 3.00"
    3.00<-3.33 = "> 3.00 to 3.33"
    3.33<-3.66 = "> 3.33 to 3.66"
    3.66<-high = "> 3.66 ";
run;


*****------------------------------ Frequencies and prints ---------------------------*****;

proc freq data=perf_&Y;
  table sttime*stscore*sts*ststm*ts1*ts2*tstm / list missing nocum nopercent;
  table fttime*ftscore*ts1*ts2*tstm*ts2tm*stscore / list missing nocum nopercent;
  table oltime*fttime*tr1*tr2*tr1tm*tr2tm / list missing nocum nopercent;
  format sttime fttime oltime ststm tstm ts2tm tr1tm tr2tm sec_b.;
  title2 "Standing balance - Times";
run;
proc freq data=perf_&Y;
  table fsbtime*FSBRATIO*sttime*fttime*oltime  / list missing nocum nopercent;
  format sttime fttime oltime fsbtime sec_f. FSBRATIO ratio.;
  title2 "Standing balance - Summary time";
run;
/*
proc print data=perf_&Y;
  where 0 < fttime < 30 and
    (tr1=3 or 0 < tr1tm < 30 or tr2=3 or 0 < tr2tm < 30);
  id habcid;
  var source oltime fttime tr1 tr2 tr1tm tr2tm;
  title2 "One-leg stand time - Cases with tandem stand < 30 forcing one-leg stand to be 0";
run;
*/

proc freq data=perf_&Y;
  table FTSCORE*STSCORE*sts*ststm / list missing;
  format sts result. ststm sec_a.;
  title2 "Standing Balance - Semi-tandem score";
run;
proc freq data=perf_&Y ;
  table FTSCORE*STimelt10*ts1*tstm*ts2*ts2tm / list missing;
  table FTSCORE*STimelt10*FT1*FT2 / missing list;
  format ts1 ts2 result. tstm ts2tm sec_b.;
  title2 "Standing Balance - Full-tandem score";
run;
proc freq data=perf_&Y;
```

```
  title2 "Standing Balance - Tandem Score";
  table SBSCORE*STSCORE*FTSCORE / list missing;
run;
proc print data=perf_&Y;
  where FTSCORE=0 and (ts1 in(2,3) or ts2 in(2,3)) and (tstm>3 or ts2tm>3);
  id Habcid;
  var source sts ststm ts1 tstm ts2 ts2tm;
  title2 "Standing Balance - Cases with Full balance set to zero because Semi balance time < 10 sec";
run;
proc freq data=perf_&Y;
  table ABLE5CS*scs*rcs
        CAT5CS*CHR5PACE*ABLE5CS*rsec / list missing nopercent nocum;
  format scs chair3x. rcs chair4x. CHR5PACE pace. rsec sec_c.;
  title2 "Chair Stands";
run;


*****------------------------ Save Performance File ------------------------*****;
%if (&Y=Y4 or &Y=Y6 or &Y=Y11) %then %do;
proc freq data=Perf_&Y;
  where source="H";
  table DID6MUW*&hpre.4mwtm1*&hpre.4mw1*&hpre.4mwtm2 / list missing nocum nopercent;
  format SIXMWTM &pre.UPTM1 &pre.UPTM2 walk_sec. &Y.UWPACE walk_pace. &pre.up1 &pre.up2 walk_steps. &Y.UWRATIO
walk_ratio.;
  format &hpre.4mwtm1 &hpre.4mwtm2 walk_sec.;
  title2 "6M Usual walk - Home Visits";
run;

proc freq data=Perf_&Y;
  where  source="P";
  table DID6MUW*yc4mwtm1*yc4mw1*yc4mwtm2 / list missing nocum nopercent;
  format &Y.UWTM &pre.UPTM1 &pre.UPTM2 walk_sec. &Y.UWPACE walk_pace. &pre.up1 &pre.up2 walk_steps. &Y.UWRATIO
walk_ratio.;
  format yc4mwtm1 yc4mwtm2 walk_sec.;
  title2 "6M Usual walk - Proxy";
run;
%end;
%mend skip;
%if (&Y=Y1 or &Y=Y4 or &Y=Y6 or &Y=Y11 or &Y=Y11) %then %do;
data calc.Perfm_&Y (keep = habcid
       DID6MUW SIXMWTM &Y.UWPACE &Y.UWSCR &Y.UWRATIO DID6MNW NWTIME NWPACE
       NWSCORE NWSCOREQ NWRATIO ABLE5CS CHR5PACE CAT5CS CSRATIO SBSCORE
       FSBTIME FSBRATIO EPESEPPB HABCPPB PPB12CAT);
  set perf_&Y;
run;
/*proc freq data=Perf_&Y;
  where source="V";
  table DID&Y.UW*&pre.up1*&pre.uptm1*&pre.upru1*&pre.up2
        &Y.UWTM*DID&Y.UW*&pre.uptm1*&pre.uptm2
        &Y.UWSCR*&Y.UWPACE*DID&Y.UW*&Y.UWTM
        &Y.UWRATIO*DID&Y.UW*&Y.UWPACE / list missing nocum nopercent;
  format &Y.UWTM &pre.UPTM1 &pre.UPTM2 walk_sec. &Y.UWPACE walk_pace. &pre.up1 &pre.up2 walk_steps. &Y.UWRATIO
walk_ratio.;
  title2 "6M Usual walk - Clinic Visits";
run;

proc freq data=Perf_&Y;
  table did6mnw*&pre.20tr1*&pre.20tr2*&pre.20tr3*&pre.20cna*DID&Y.UW
        nwtime*did6mnw*&pre.20tr1*&pre.20ct1*&pre.20tr2*&pre.20ct2*&pre.20tr3*&pre.20ct3
        nwscore*nwpace*did6mnw*nwtime
        nwratio*nwpace
       / list missing nocum nopercent;
  format nwtime &pre.20ct1 &pre.20ct2 &pre.20ct3 walk_sec. nwpace walk_pace. nwratio pace_ratio.;
  title2 "20cm narrow walk";
run;

proc freq data=Perf_&Y;
  table nwscoreq*pcpacedf*DID&Y.UW*&Y.UWPACE*did6mnw*nwpace
       / list missing nocum nopercent;
  format &Y.UWPACE nwpace walk_pacex. pcpacedf pcpace_diff. pacediff pace_diff.;
  title2 "Comparison between 6M Walk and 20cm narrow walk";
run;

proc freq data=Perf_&Y;
  table EPESEPPB*&Y.UWSCR*CAT5CS*SBSCORE
        HABCPPB*FSBRATIO*CSRATIO*&Y.UWRATIO*NWRATIO
        PPB12CAT*HABCPPB
```

```
        / list missing nocum nopercent;
  format HABCPPB HABCPPB. FSBRATIO CSRATIO &Y.UWRATIO NWRATIO perf_ratio.;
  title2 "Summary Performance Scores";
run;*/
%end;

%else %do;
data calc.Perfm_&Y (keep = habcid
      ABLE5CS CHR5PACE CAT5CS CSRATIO SBSCORE
       FSBTIME FSBRATIO);
  set perf_&Y;
run;
%end;
/*proc contents data=calc.Perfm_&Y varnum;
  title2 "Perf_&Y File";
run;

proc means data=calc.Perfm_&Y n nmiss min mean max;
run;*/

%mend perfm;
%perfm;
```

```
** Rename file and re-order variables;
data calc.y11perf;
  retain HABCID ABLE5CS CAT5CS CHR5PACE CSRATIO FSBTIME FSBRATIO
     SBSCORE DID6MUW SIXMWTM Y11UWPACE Y11UWSCR Y11UWRATIO DID6MNW
     NWTIME NWPACE NWSCORE NWRATIO NWSCOREQ EPESEPPB HABCPPB PPB12CAT;
  set calc.perfm_y11;
  label
    ABLE5CS     ="Perf: Did 5 chair stands (yes=1)"
    CAT5CS      ="Perf: Epese score for chair stands"
    CHR5PACE    ="Perf: # Chair stands per second"
    CSRATIO     ="Perf: Chair stands performance ratio"
    FSBTIME     ="Perf: Standing balance test time (0-90)"
    FSBRATIO    ="Perf: Standing balance time ratio"
    SBSCORE     ="Perf: Epese score for standing balance"
    DID6MUW     ="Perf: Did 6m usual walk (yes=1)"
    SIXMWTM     ="Perf: Time to walk 6m"
    Y11UWPACE   ="Perf: Walking speed (m/sec) over 3,4, or 6m"
    Y11UWSCR    ="Perf: Epese score for walking speed"
    Y11UWRATIO  ="Perf: Usual walk performance ratio"
    DID6MNW     ="Perf: Did 6m narrow walk (yes=1)"
    NWTIME      ="Perf: Time to walk a 20cm wide 6m course"
    NWPACE      ="Perf: Walking speed for narrow walk 6m"
    NWSCORE     ="Perf: Epese category for narrow walk"
    NWRATIO     ="Perf: Narrow walk performance ratio"
    NWSCOREQ    ="Perf: % diff btw narrow & usual walks"
    EPESEPPB    ="Perf: EPESE performance battery score 0-12"
    HABCPPB     ="Perf: Health ABC performance score 0-4"
    PPB12CAT    ="Perf: Categorical scoring of HABCPPB 0-12";
run;

proc delete data=calc.perfm_y11;
run;
```

Appendix IX
Cognitive Function Scores

Using Clinic and Home Visit Variables

Investigator Name: Ronald Shorr, MD, MS

Analysis Plan Reference Number: AP98-08

Teng Mini-Mental State Exam

Variable	General Description	Detailed Description	How variable is calculated
MMMFLAG	Flag for possible invalid 3MS scores	Flag showing that one or more items were missing or marked "not att/disabled" with a disability marked in Q19. **Investigators are cautioned to examine the component variables to determine whether to include ppt in analysis.**	If any of the following variables is missing or marked "not att/disabled", MMMFLAG=1: Y11BORNM, Y11BORND, Y11BORNY, Y11CITY2, Y11STE2, Y11SHRT, Y11BLU, Y11HON, Y11CNTBK, Y11SPWLD, Y11SHRM, Y11BLRM, Y11HNRM, E22DAY, Y11DAYWK, Y11SEAS, Y11STAT, Y11CNTY, Y11CITN, Y11WHRE, Y11FRHD, Y11CHN, Y11SHLD, Y11ELP,Y11KNK, Y11E2SCR, Y11ARLG, Y11LCRY, Y11ETSL, Y11RPT, Y11IF, Y11AND, Y11BUT, Y11CRD1, Y11WLD, Y11LKE, Y11TO, Y11GO, Y11OUT, Y11PENT1, Y11PENT2, Y11INT, Y11PCOR, Y11PFLD, Y11PHND, Y11SH2, Y11BLU2, Y11HON2 Otherwise MMMFLAG=0

General and Detailed Description	Variables Involved	Specific Instructions	How to handle missing or special values
MMMSCORE 3MS score on a 100-point scale using the method outlined in Teng (J Clin Psychiatry, 1987: 48: 314-318) and made to match CHS scoring as much as possible	Y11BORNM--Y11BORNY	Date/Place of Birth: Use data DOB as correct birthdate**.** One point each for Y11BORNM, Y11BORND, Y11BORNY. Other responses score 0.	
	Y11SHRT--Y11HON	Register 3 words: Score 1 point for each correct response, (Correction for incorrect scoring of first response: if Y11SHRT=1 and Y11BLU=1 and Y11HON=1 and Y11NUM>1 then do; if Y11NUM=2 subtract 1; else if Y11NUM=3 subtract 2; else if Y11NUM>=4 subtract 3;)	7(error/refused) or 3(not att/disabled) score 0.
		Mental Reversal:	N/A
	Y11CNT--Y11CNTBK	Counting backwards. If participant cannot count forward (Y11CNT=2) then score 0. If all correct (Y11CNTBK= 54321) then score 2. If one or 2 digits out of place, score 1. Else score 0**.**	N/A
	Y11SPL--Y11SPWLD	Spelling backwords. If participant unable to spell WORLD (Y11SPL=2) then score 0. WHIMS algorithm used to score Y11SPWLD[1].	
	Y11SHRM--Y11HNRM	First Recall: 1(spontaneous recall)=3 points, 2(correct word/incorrect form)=3 points, 3(after 1st prompting)= 2 points, 4(after 2nd prompting)= 1 point 7=0 points. Not attempted/disabled (6) scores 0.; **Note: Teng does not have score for correct word/incorrect form**	6(Not attempted/ disabled scores 0)

[1] Available from the Coordinating Center on request

MMMSCORE (cont)	Y11DAYWK—Y11SEAS	Temporal Orientation: Y11SEAS 1=1 point, 7=0 points, 3(not attempted/disabled)=0 points. Y11DAYWK 1=1point 7=0 points, 3=0 points *Note: TENG allows 1 point for season within 1 month, but this was not recorded.*	7(error/refused) or 3(not att/disabled) score 0.
	E22DATE	Temporal Orientation: E22DATE compared to R1DATE (clinic visit checklist) or T5DATE (home visit checklist) which has been verified against R2DATE (clinic visit questionnaire date) or T4DATE (home visit questionnaire date). Checklist and questionnaire dates occasionally differ from each other due to examiner error. If that happens the larger of the two possible subscores is used. Year—correct = 8 points Year—within 1 = 4 points, within 2-5=2 points; else = 0 points Month—within 5 days=2 points Month -- within 6-30 days 1 point, else 0 points. Day—correct=3 points. Day—within 1-2 days=2 points. Day—within 3-5 days=1point, else 0 points.	N/A
	Y11TAT—Y11WHRE	Spatial Orientation: For each item a correct response (1) scores 1 point (except state, which scores 2 points), and incorrect response (7) scores 0 and not attempted/disabled (3) scores 0	7(error/refused) or 3(not att/disabled) score 0.
	Y11FRHD—Y11KNK	Naming: For each item a correct response (1) scores 1 point, and incorrect response (7) scores 0 and not attempted/disabled (3) scores 0	If Y11PENC=3 & Y11WTCH=3 & Y11FRHD=3 & Y11CHIN=3 & Y11SHLD=3 & Y11ELP=3 & Y11KNK=3 set them all to missing, otherwise, 7(error/refused) or 3(not att/disabled) score 0.

MMMSCORE (cont)	Y11E2SCR	Naming animals: Number of points is equal to Y11E2SCR, to a maximum of 10 points.	N/A
	Y11ARLG—Y11ETSL	Similarities: Correct answer (1) scores 2 points, lesser correct (2) scores 1 point, error/refused (7) scores 0 points, not attempted/disabled (3) scores 0	7(error/refused) or 3(not att/disabled) score 0.
	Y11RPT	Repetition: Correct (1) scores 2 points Miss 1 or 2 (2) scores 1 point. Incorrect (7) scores 0 point. Not attempted/ disabled (3) scores 0	7(error/refused) or 3(not att/disabled) score 0.
	Y11IF—Y11BUT	Correct (1) scores 1 point Error/refused (7) scores 0 point Not attempted/disabled (3) scores 0	7(error/refused) or 3(not att/disabled) score 0.
	Y11CRD1	Read and obey: Correct (1) scores 3 points After Prompting (2) scores 2 points Reads, does not close eyes (3) scores 1 point Incorrect (7) scores 0 points Not attempted/disabled (5) scores 0	If Y11CRD1=5 and SQVIS=-1 then Y11CRD1=.; *n=5; otherwise 7(error/refused) or 5(not att/disabled) score 0.

MMMSCORE (cont)	Y11WLD— Y11OUT	Sentence writing: For each correct response (1) scores 1 point Error/refused (7) scores 0 Disabled/not attempted (3) scores 0	If (Y11WLD=3 and Y11LKE=3 and Y11TO=3 and Y11GO=3 and Y11OUT=3) and (Y11WRITE=-1 OR Y11CRD1=5) then keep as not att/ disabled; otherwise 7(error/refused) or 3(not att/disabled) score 0.
	Y11PENT1— Y11PENT2	Figure Drawing: For each: Value — Score (points) 1 (5 approx equal sides) — 4 2 (longest/shortest>2:1) — 3 3 (nonpentagon figure) — 2 4 (not enclosed figure) — 1 7 (less than 2 lines/refused) — 0 6 (not attempted/disabled) — 0	If Y11PENT1=6 and Y11PENT2=6 and Y11INT=4 and (Y11WLD=3 and Y11LKE=3 and Y11TO=3 and Y11GO=3 and Y11OUT=3) then keep Y11PENT1, Y11PENT2, and Y11INT as disabled; otherwise 7(error/refused) or 6(not att/disabled) score 0.
	Y11INT	Value — Score (points) 1 (4-cornered) — 2 2 (not 4-cornered) — 1 4 (not attempted/disabled) — 0 7 (no enclosure/refused) — 0	

MMMSCORE (cont)	Y11PCOR— Y11PHND	Three step command: For each of Y11PCOR and Y11PFLD: Value — Score (points) 1 (Correct) — 2 3 (Not att/disabled) — 0 7 (Error/refused) — 0 (For Y11PHND there is an anomalous value label: Error/refused is'2' not '7)	If Y11PCOR=3 and Y11PFLD=1 and Y11PHND=1 then Y11WRITE=1; *n=0; otherwise 7(error/refused) or 4(not att/disabled) score 0.
	Y11SH2— Y11HON2	Second Recall: 1(spontaneous recall)=3 points, 2(correct word/incorrect form)=3 points, 3(after 1st prompting)= 2 points, 4(after 2nd prompting)= 1 point 7(unable/refused)=0 points. Not attempted/disabled (6) scores 0. *Note: Teng does not have score for correct word/incorrect form; CHS also gave full credit.*	7(error/refused) or 3(not att/disabled) or 2(not att/disabled) score 0
	Y11CITY2, Y11STEY2	1 point each if 1(matches), 0 if 7(does not match/refused) or 3(not att/disabled)	7(error/refused) or 3(not att/disabled)
		Sum of all subscores (maximum 100). If any subscores missing or marked disabled, prorate score and round to nearest integer If subscores totalling more than 20 points are missing or disabled, set MMMSCORE to .E	**Check MMMFLAG for scores that have been prorated or set to missing**

Digital Symbol Substitution

Variable	Descriptive Title	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
DSS	Number of digit symbol substitutions correctly made	Number of digit symbol substitutions correctly made	Y11NC-Y11NI	If either Y11NC or Y11NI is missing, DSS=.M If both are missing, DSS=.M. If Y11NC<Y11NI, DSS=.M	substitutions
DSS111	Y1-11 change: digit symbol score	Change in DSS score from base-line to Year 11	DSS111 = DSS – year 1 DSS	If either DSS or year 1 DSS is missing then DSS111 = .	

```
*****************************************************************************
******
*  Saved as
*    \\Fu-hsing-c\HABC\HABC_SAS\Calculated Variables\Programs\Year
11\Teng3MS_Y11.sas
*
*  Ase Sewall 11/22/09 - Modified year 10 program for use in Year 11
*****************************************************************************
******;

*options ls=132 ps=58 formchar='|----|+|---+=|-/\<>*' nocenter pageno=1 nofmterr
mprint macrogen;


*DM LOG 'CLEAR' ; *DM OUTPUT 'CLEAR' ;

%include '\\Fu-hsing-c\habc\habc_sas\programs\initV8_ase.sas';
libname calc '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year 11';

*********************************************************************;
**  Create Teng Mini-Mental (mmms) Scores for Year 11.                **;
*** Updated to include WORLD macro and shirt, blue, honesty scoring fix**;
*********************************************************************;

%include '\\Fu-hsing-c\habc\habc_sas\macros\WORLD.sas';


data teng  /*(keep=HABCID MMMSCORE MMMFLAG)*/  ;
  merge daf.y11visit (in=inY11 keep=habcid Visitype Y11VISDATE
                           Y11TDAYM Y11TDAYD Y11TDAYY Y11TDAYRF
                           Y11BORNM Y11BORND Y11BORNY Y11CITY Y11STE
                           Y11SHRT Y11BLU Y11HON Y11NUM Y11CNT Y11CNTBK Y11SPWLD
Y11SHRM
                           Y11BLRM Y11HNRM Y11SEAS Y11STAT Y11CNTY Y11DAYWK
                           Y11CITN Y11WHRE Y11FRHD Y11CHIN Y11SHLD Y11ELP Y11KNK
                           Y11E2SCR Y11ARLG Y11LCRY Y11ETSL Y11RPT Y11IF Y11AND
                           Y11BUT Y11CRD1 Y11WLD Y11LKE Y11TO Y11GO Y11OUT
                           Y11PENT1 Y11PENT2 Y11INT Y11PCOR Y11PFLD Y11PHND
                           Y11SHIRT2 Y11BLU2 Y11HON2 Y11TMMDATE
                           Y11PENC Y11WTCH Y11CITY2 Y11STE2
                           Y11VIS Y11HEAR Y11WRITE Y11ILLIT Y11LANG Y11OTH)
        daf.ph(keep=habcid dob);
  by habcid;

  if visitype in (0,1,6,11);
run;

data teng2;
  set teng;

  *Recode items on the 3MS administered in Year 1.  In most every case,
  not attempted/disabled are set to error/refused;
  IF Y11PENC=3 AND Y11WTCH=3 AND Y11FRHD=3 AND Y11CHIN=3 AND
     Y11SHLD=3 AND Y11ELP=3 AND Y11KNK=3 THEN DO;
       Y11PENC=.; Y11WTCH=.; Y11FRHD=.; Y11CHIN=.;
       Y11SHLD=.; Y11ELP=.; Y11KNK=.;
  END;
```

```
  ELSE DO;
  IF Y11HNRM=6 THEN Y11HNRM=7;
  IF Y11DAYWK=3 THEN Y11DAYWK=7;
  IF Y11SEAS=3 THEN Y11SEAS=7;
  IF Y11CNTY=3 THEN Y11CNTY=7;
  IF Y11CITN=3 THEN Y11CITN=7;
  IF Y11PENC=3 THEN Y11PENC=7;
  IF Y11WTCH=3 THEN Y11WTCH=7;
  IF Y11FRHD=3 THEN Y11FRHD=7;
  IF Y11CHIN=3 THEN Y11CHIN=7;
  IF Y11SHLD=3 THEN Y11SHLD=7;
  IF Y11ELP=3 THEN Y11ELP=7;
  IF Y11KNK=3 THEN Y11KNK=7; END;

  IF Y11ARLG=4 THEN Y11ARLG=7;
  IF Y11LCRY=3 THEN Y11LCRY=7;
  IF Y11ETSL=3 THEN Y11ETSL=7;
  IF Y11CRD1=5 and Y11VIS=-1 THEN Y11CRD1=.; ELSE
  IF Y11CRD1=5 THEN Y11CRD1=7; *n=16;
  IF (Y11WLD=3 AND Y11LKE=3 AND Y11TO=3 AND Y11GO=3 AND Y11OUT=3) AND
     (Y11WRITE=-1 OR Y11CRD1=5) THEN;
  ELSE DO;
    IF Y11WLD=3 THEN Y11WLD=7;
    IF Y11LKE=3 THEN Y11LKE=7;
    IF Y11TO=3 THEN Y11TO=7;
    IF Y11GO=3 THEN Y11GO=7;
    IF Y11OUT=3 THEN Y11OUT=7;
  END;
  IF Y11PENT1=6 AND Y11PENT2=6 AND Y11INT=4 AND
    (Y11WLD=3 AND Y11LKE=3 AND Y11TO=3 AND Y11GO=3 AND Y11OUT=3) THEN;
  ELSE DO;
     IF Y11PENT1=6 THEN Y11PENT1=7;
     IF Y11PENT2=6 THEN Y11PENT2=7;
     IF Y11INT=4 THEN Y11INT=7;
  END;
  IF Y11PCOR=3 AND Y11PFLD=1 AND Y11PHND=1 THEN Y11PCOR=1; *n=2;

/* Count number either missing or not attempted due to legitimate disability */

 counter=0;
  if Y11BORNM<=.z then counter+1;
  if Y11BORND<=.z then counter+1;
  if Y11BORNY<=.z then counter+1;
  if (Y11CITY2=3) or Y11CITY2<=.z then counter+1;
  if (Y11STE2=3) or Y11STE2<=.z then counter+1;
  if (Y11SHRT=3) or Y11SHRT<=.z then counter+1;
  if (Y11BLU=3) or Y11BLU<=.z then counter+1;
  if (Y11HON=3) or Y11HON<=.z then counter+1;
  if Y11CNTBK<=.z then counter+2;
  if Y11SPWLD=' ' then counter+5;
  if (Y11SHRM=6) or Y11SHRM<=.z then counter+3;
  if (Y11BLRM=6) or Y11BLRM<=.z then counter+3;
  if (Y11HNRM=6) or Y11HNRM<=.z then counter+3;
  if Y11TDAYRF=1 then counter+13;
  if (Y11DAYWK=3) or Y11DAYWK<=.z then counter+1;
  if (Y11SEAS=3) or Y11SEAS<=.z then counter+1;
  if (Y11STAT=3) or Y11STAT<=.z then counter+2;
```

```
if (Y11CNTY=3) or Y11CNTY<=.z then counter+1;
if (Y11CITN=3) or Y11CITN<=.z then counter+1;
if (Y11WHRE=3) or Y11WHRE<=.z then counter+1;
if (Y11FRHD=3) or Y11FRHD<=.z then counter+1;
if (Y11CHIN=3) or Y11CHIN<=.z then counter+1;
if (Y11SHLD=3) or Y11SHLD<=.z then counter+1;
if (Y11ELP=3) or Y11ELP<=.z then counter+1;
if (Y11KNK=3) or Y11KNK<=.z then counter+1;
if  Y11E2SCR<=.z then counter+10;
if (Y11ARLG=4) or Y11ARLG<=.z then counter+2;
if (Y11LCRY=3) or Y11LCRY<=.z then counter+2;
if (Y11ETSL=3) or Y11ETSL<=.z then counter+2;
if (Y11RPT=4) or Y11RPT<=.z then counter+2;
if (Y11IF=3) or Y11IF<=.z then counter+1;
if (Y11AND=3) or Y11AND<=.z then counter+1;
if (Y11BUT=3) or Y11BUT<=.z then counter+1;
if (Y11CRD1=5) or Y11CRD1<=.z then counter+3;
if (Y11WLD=3) or Y11WLD<=.z then counter+1;
if (Y11LKE=3) or Y11LKE<=.z then counter+1;
if (Y11TO=3) or Y11TO<=.z then counter+1;
if (Y11GO=3) or Y11GO<=.z then counter+1;
if (Y11OUT=3) or Y11OUT<=.z then counter+1;
if (Y11PENT1=6) or Y11PENT1<=.z then counter+4;
if (Y11PENT2=6) or Y11PENT2<=.z then counter+4;
if (Y11INT=4) or Y11INT<=.z then counter+2;
if (Y11PCOR=3) or Y11PCOR<=.z then counter+1;
if (Y11PFLD=3) or Y11PFLD<=.z then counter+1;
if (Y11PHND=3) or Y11PHND<=.z then counter+1;
if (Y11SHIRT2=6) or Y11SHIRT2<=.z then counter+3;
if (Y11BLU2=6) or Y11BLU2<=.z then counter+3;
if (Y11HON2=6) or Y11HON2<=.z then counter+3;

/* MMMFLAG=1 if any are missing or not attempted due to disability */
if counter>0 then MMMFLAG=1;
   else         MMMFLAG=0;

/* Calculate score */

/*date and place of birth*/
      mm=month(dob);
      dd=day(dob);
      yy=year(dob)-1900;
      if mm=Y11BORNM then n1=1; else n1=0;
      if dd=Y11BORND then n2=1; else n2=0;
      if yy=Y11BORNY then n3=1; else n3=0;
      p2=sum(n1,n2,n3);

      p3=1;
         if Y11CITY2 = 7 then p3=0;
         if Y11CITY2 = 3 then p3 =.;
         if Y11CITY2 < 0 then p3 =.;
      p4=1;
         if Y11STE2 = 7 then p4=0;
         if Y11STE2 = 3 then p4 =.;
         if Y11STE2 < 0 then p4 =.;

/*register 3 words*/
```

```
        p5=1;
           if Y11SHRT = 7 then p5=0;
           if Y11SHRT = 3 then p5 =.;
           if Y11SHRT < 0 then p5 =.;
        p6=1;
           if Y11BLU = 7 then p6=0;
           if Y11BLU = 3 then p6 =.;
           if Y11BLU lt 0 then p6 =.;
        p7=1;
           if Y11HON = 7 then p7=0;
           if Y11HON = 3 then p7 =.;
           if Y11HON lt 0 then p7 =.;
        /*Note: See correction at end of program for
                those who needed more than one try, but
                were marked as getting all 3 right.*/

  /*reversal*/
       /*partial credit*/
        length tempch $5;
        tempch=left(trim(Y11CNTBK));

*this next line appears to cause everyone after the first person to get p8=1
*   because count never goes back to 0;

 count=0;
        if substr(tempch,1,1)='5' then count+1;
        if substr(tempch,2,1)='4' then count+1;
        if substr(tempch,3,1)='3' then count+1;
        if substr(tempch,4,1)='2' then count+1;
        if substr(tempch,5,1)='1' then count+1;
        if Y11CNT=2 then p8=0;
                else if Y11CNTBK = 54321 then p8=2;
                else if Y11CNTBK lt 0 then p8=.;
                else if count>=3 then p8=1;
                else p8=0;

%world(Y11SPWLD);
    p14=s4p2;
  /*first 3 word memory--full credit to incorrect form*/
        p15 = .;
             if Y11SHRM = 1 then p15 = 3;
                else if Y11SHRM = 2 then p15 = 3;
                else if Y11SHRM = 3 then p15 = 2;
                else if Y11SHRM = 4 then p15 = 1;
                else if Y11SHRM = 7 then p15 = 0;
                else if Y11SHRM lt 0 then p15 = .;

        p16 = .;
             if Y11BLRM = 1 then p16 = 3;
                else if Y11BLRM = 2 then p16 = 3;
                else if Y11BLRM = 3 then p16 = 2;
                else if Y11BLRM = 4 then p16 = 1;
                else if Y11BLRM = 7 then p16 = 0;
                else if Y11BLRM lt 0 then p16 =.;

        p17 = .;
             if Y11HNRM = 1 then p17 = 3;
```

```
                else if Y11HNRM = 2 then p17 = 3;
                else if Y11HNRM = 3 then p17 = 2;
                else if Y11HNRM = 4 then p17 = 1;
                else if Y11HNRM = 7 then p17 = 0;
                else if Y11HNRM lt 0 then p17=.;

  /*Temporal orientation*/
        seas= 1;
           if Y11SEAS =7 then seas=0;
           if Y11SEAS=3 then seas=.;
           if Y11SEAS lt 0 then seas=.;
        dywk=1;
           if Y11DAYWK=7 then dywk=0;
           if Y11DAYWK=3 then dywk=.;
           if Y11DAYWK lt 0 then dywk=.;
        p18=sum(seas,dywk);

        length m d y 4;
        m=Y11TDAYM;
        d=Y11TDAYD;
        y=Y11TDAYY;
        if 1<=m<=12 and 1<=d<=31 and 0<=y<=99 then e22date=mdy(m,d,y);
           else e22date=.;

        mm=month(Y11TMMDATE);
        dd=day(Y11TMMDATE);
        yy=year(Y11TMMDATE)-2000;

        d1=abs(m-mm);
        d2=abs(d-dd);
        d3=abs(y-yy);

        *Year;
        if d3=0 then y1=8;
            else if d3=. then y1=.;
            else if d3 = 1 then y1= 4;
            else if d3 in (2,3,4,5) then y1= 2;
            else y1=0;
        *Month;
        if d1=0 then y2=2;
            else if d1=. then y2=.;
            else if d1=1 then do;
              if (mm=month(e22date-5) or mm=month(e22date+5)) then y2=2;
                 else y2=1;
              end;
            else y2=0;
        *Day;
        if d2=0 then y3=3;
            else if d2=. then y3=.;
            else if d2 le 2 then y3=2;
            else if d2 le 5 then y3=1;
            else y3=0;

   ****************************************************************************
   *  In one case, date participant gave was impossible  SAS kicks out impossible
dates.
   *     Date re-assigned
```

```
 ************************************************************************** ;

      if habcid =1947 then do ; *The day was off by one day;
              y3 = 2 ;*day;
              e22date = mdy(4,30,1999);
      end ;

      p19=sum(y1,y2,y3);

/* Spatial orientation */
      p20 = 2;
              if Y11STAT = 7 then p20 = 0;
              if Y11STAT = 3 then p20=0;
              if Y11STAT lt 0 then p20 =.;
      p21 = 1;
              if Y11CNTY = 7 then p21 = 0;
              if Y11CNTY = 3 then p21=0;
              if Y11CNTY lt 0 then p21 =.;
      p22 = 1;
              if Y11CITN = 7 then p22 = 0;
              if Y11CITN = 3 then p22=0;
              if Y11CITN lt 0 then p22 =.;
      p23 = 1;
              if Y11WHRE = 7 then p23 = 0;
              if Y11WHRE = 3 then p23=0;
              if Y11WHRE lt 0 then p23=.;

/* Naming */
      p24 = 1;
              if Y11FRHD = 7 then p24 = 0;
              if Y11FRHD = 3 then p24=.;
              if Y11FRHD lt 0 then p24=.;
      p25 = 1;
              if Y11CHIN  = 7 then p25 = 0;
              if Y11CHIN  = 3 then p25=.;
              if Y11CHIN lt 0 then p25=.;
      p26 = 1;
              if Y11SHLD = 7 then p26 = 0;
              if Y11SHLD = 3 then p26=.;
              if Y11SHLD lt 0 then p26=.;
      p27 = 1;
              if Y11ELP  = 7 then p27 = 0;
              if Y11ELP  = 3 then p27=.;
              if Y11ELP lt 0 then p27=.;
      p28 = 1;
              if Y11KNK  = 7 then p28 = 0;
              if Y11KNK  = 3 then p28=.;
              if Y11KNK lt 0 then p28=.;

/* naming animals*/
      if Y11E2SCR lt 0 then p29 =.;
              else p29 = min(10,Y11E2SCR);

p30=2;
      if Y11ARLG=2 then p30=1;
      if Y11ARLG=7 then p30=0;
      if Y11ARLG=4 then p30=0;
```

```
      if Y11ARLG lt 0 then p30=.;

p31=2;
      if Y11LCRY=2 then p31=1;
      if Y11LCRY=7 then p31=0;
      if Y11LCRY=3 then p31=0;
      if Y11LCRY lt 0 then p31=.;
p32=2;
      if Y11ETSL=2 then p32=1;
      if Y11ETSL=7 then p32=0;
      if Y11ETSL=3 then p32=0;
      if Y11ETSL lt 0 then p32=.;

/* Repeat*/

p33=2;
      if Y11RPT=2 then p33=1;
      if Y11RPT=7 then p33=0;
      if Y11RPT=4 then p33=0;
      if Y11RPT lt 0 then p33=.;

p34=1;
      if Y11IF=7 then p34=0;
      if Y11IF=3 then p34=0;
      if Y11IF lt 0 then p34=.;

p35=1;
      if Y11AND=7 then p35=0;
      if Y11AND=3 then p35=0;
      if Y11AND lt 0 then p35=.;

p36=1;
      if Y11BUT=7 then p36=0;
      if Y11BUT=3 then p36=0;
      if Y11BUT lt 0 then p36=.;

/*card read*/
p37=3;
      if Y11CRD1=2 then p37=2;
      if Y11CRD1=3 then p37=1;
      if Y11CRD1=7 then p37=0;
      if Y11CRD1=5 then p37=.;
      if Y11CRD1 lt 0 then p37=.;

/* Sentence Writing*/
p38=1;
      if Y11WLD=7 then p38=0;
      if Y11WLD=3 then p38=0;
      if Y11WLD lt 0 then p38=.;
p39=1;
      if Y11LKE=7 then p39=0;
      if Y11LKE=3 then p39=0;
      if Y11LKE lt 0 then p39=.;
p40=1;
      if Y11TO=7 then p40=0;
      if Y11TO=3 then p40=0;
      if Y11TO lt 0 then p40=.;
```

```
  p41=1;
        if Y11GO=7 then p41=0;
        if Y11GO=3 then p41=0;
        if Y11GO lt 0 then p41=.;
  p42=1;
        if Y11OUT=7 then p42=0;
        if Y11OUT=3 then p42=0;
        if Y11OUT lt 0 then p42=.;

  /* Pentagon */
*********************************************************************
*  LH 11/30/06 - Modified code below from
*  from - if Y11PENT1=5 then p43=0  (5 is not a valid answer here)
*  to - if Y11PENT1=6 then p43=0
********************************************************************* ;
  p43=4;
        if Y11PENT1=2 then p43=3;
        if Y11PENT1=3 then p43=2;
        if Y11PENT1=4 then p43=1;
        if Y11PENT1=7 then p43=0;
        if Y11PENT1=6 then p43=0;
        if Y11PENT1 lt 0 then p43=.;
  p44=4;
        if Y11PENT2=2 then p44=3;
        if Y11PENT2=3 then p44=2;
        if Y11PENT2=4 then p44=1;
        if Y11PENT2=7 then p44=0;
        if Y11PENT2=6 then p44=0;
        if Y11PENT2 lt 0 then p44=.;

  /* Intersection */
  p45=2;
        if Y11INT=2 then p45=1;
        if Y11INT=7 then p45=0;
        if Y11INT=4 then p45=0;
        if Y11INT lt 0 then p45=.;

  /* Three-step command*/
  p46=1;
        if Y11PCOR=7 then p46=0;
        if Y11PCOR=3 then p46=0;
        if Y11PCOR lt 0 then p46=.;
  p47=1;
        if Y11PFLD=7 then p47=0;
        if Y11PFLD=3 then p47=0;
        if Y11PFLD lt 0 then p47=.;
  p48=1;
        if Y11PHND=7 then p48=0;
        if Y11PHND=3 then p48=0;
        if Y11PHND lt 0 then p48=.;

  /* Second recall--gives full credit to incorrect form*/
  p49=3;
        if Y11SHIRT2=2 then p49=3;
        if Y11SHIRT2=3 then p49=2;
        if Y11SHIRT2=4 then p49=1;
        if Y11SHIRT2=7 then p49=0;
```

```
        if Y11SHIRT2=6 then p49=0;
        if Y11SHIRT2 lt 0 then p49=.;
  p50=3;
        if Y11BLU2=2 then p50=3;
        if Y11BLU2=3 then p50=2;
        if Y11BLU2=4 then p50=1;
        if Y11BLU2=7 then p50=0;
        if Y11BLU2=6 then p50=0;
        if Y11BLU2 lt 0 then p50=.;
  p51=3;
        if Y11HON2=2 then p51=3;
        if Y11HON2=3 then p51=2;
        if Y11HON2=4 then p51=1;
        if Y11HON2=7 then p51=0;
        if Y11HON2=6 then p51=0;
        if Y11HON2 lt 0 then p51=.;

*****************************************************************
* LH  11/21/06 - Modified statement below to exclude p9-p13
*  variables that are no longer being created.
***************************************************************** ;

        mmmtemp = sum (of p2-p8, of p14-p51);

        /*Correction for shirt/blue/honesty recall*/
        if Y11SHRT=1 and Y11BLU=1 and Y11HON=1 and Y11NUM>1 then do;
           if Y11NUM=2  then mmmtemp=mmmtemp-1; else
           if Y11NUM=3  then mmmtemp=mmmtemp-2; else
           if Y11NUM>=4 then mmmtemp=mmmtemp-3;
        end;

        if mmmtemp le 0 then mmmtemp =.;

        if 0<counter<=20 then do;
           MMMSCORE=round(100*mmmtemp/(100-counter));
        end;
        else if 20<counter<100 then do;
           MMMSCORE=.E;
        end;
        else if counter=0 or counter=100 then do;
           MMMSCORE=mmmtemp;
        end;

        if mmmtemp lt 0 then do;
           MMMSCORE=.;
           MMMFLAG=.;
        end;

        label MMMSCORE = 'Teng 3MS score'
              MMMFLAG  = 'Teng 3MS prorated or set to .E';

   FORMAT MMMFLAG YNDK.;
run;


proc print data=teng2;
  where habcid =1947;
```

```
  id habcid;
  var y11tmmdate mm dd yy m d y e22date d1 d2 d3 y1 y2 y3 p19;
run;



data calc.Y11teng (keep=habcid MMMSCORE  MMMFLAG);
        set teng2;
run;

proc sort data=calc.Y11teng;
        by habcid;
run;

%macro skip;

proc univariate data=calc.Y11teng ;
    var MMMSCORE  ;
run;

proc print data=teng2 (obs=40);
  where e22date ne y11tmmdate;
  id habcid;
  var m d y e22date Y11TMMDATE mm dd yy;
  format e22date Y11TMMDATE mmddyy10.;
run;

proc print data=teng2 (obs=40);
  var d1 d2 d3 y1 y2 y3 Y11TDAYRF p19;
run;

proc freq data=teng;
  tables MMMSCORE MMMFLAG MMMFLAG*MMMSCORE p2-p8 p14-p51 / list missing;
run;
%mend skip;
data dupes;
set calc.Y11teng;
by habcid;
if not (first.habcid and last.habcid);
run;


************************************************************************
*  Saved as  \\Fu-hsing-c\HABC\HABC_SAS\Calculated Variables\Programs\Year
11\DSS_Y11.sas
*
*  Ase Sewall 12-2-2009 - Modified year 10 program for use in Year 11,
   added missing values when entire exam not done;
********************************************************************** ;

*options ls=132 ps=58 formchar='|----|+|---+=|-/\<>*' nocenter pageno=1 nofmterr
mprint macrogen;

*DM LOG 'CLEAR' ; *DM OUTPUT 'CLEAR' ;

%include '\\Fu-hsing-c\habc\habc_sas\programs\initV8_ase.sas';
libname calc '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year 11';
```

```
*********************************************************************
**  Sas code received from Ronald Shore 2/2/2000                    **
**  Calculates finger-tapping                                       **
**             digit symbol                                         **
*********************************************************************;

libname calcy1  '\\Fu-hsing-c\HABC\HABC_SAS\Data Analysis File\Current' ;

*options ls=132 ps=58 formchar='|----|+|---+=|-/\<>*' nocenter pageno=1 nofmterr;
title 'HABC calculated variables';
title2 'Program: DSS_Y11.sas';

*******************************************************************;
**  Create Digit Symbol (DSS) score                              **;
*******************************************************************;

data DSS;
   set DAF.Y11VISIT (keep=habcid Y11nc Y11ni) ;
   label DSS='Year 11 - Digit symbol score';
        DSS=sum(Y11nc-Y11ni);
   if DSS lt 0 then DSS = Y11nc;
run;

data y11DSS;
  merge DSS (in=inDSS)
        calcy1.Y1CALC (keep=habcid DSS rename=(DSS=DSSY1));
  by habcid;
  if inDSS;
  label DSS111='Y1 minus y11 change:Digit symbol score';
  DSS111=DSSY1-DSS;
run;

data calc.y11DSS (keep=HABCID DSS DSS111);
  set Y11DSS;
run;


%macro skip ;
proc freq data=Y11DSS;
        tables DSS * Y11nc * Y11ni / list missing ;
run;

proc freq data=y11DSS;
   tables DSS111* DSSY1 * DSS  / list missing ;
run;

proc print data=DSS;
where DSS =.;
run;

proc contents data=calc.y11DSS;
run;
%mend skip ;
```

Appendix X
Depression Scales

Using Clinic Visit Variables

Investigator Name: Ronald Shorr, MD, MS

Analysis Plan Reference Number: AP98-08

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
1. CES_D	CES-D score	CES-D score calculated according to Radloff, L.S. (1977). The CES-D scale: a self report Major Depressive Disorder scale for research in the general population. Applied Psychological Measurement, 1, 385-401.	1. For the following variables, use the following to convert the score: 1(rarely)=3, 2(some of time)=2, 3(much of time)=1, 4(most of time)=0: RRFGOOD, RRFHOPE, RRFHAPPY, RRFENJOY 2. For the remainder of the variables, use the following conversion 1(rarely)=0, 2(some of time)=1, 3(much of time)=2, 4(most of time)=3 3. Sum the score of the 20 items. (max=60, min=0)	If any item is answered 8 (Don't know) or 7 (Refused), set that item to missing. For 1-4 missing items, assign the average score of the answered items to the missing items. If >4 items are missing, CES_D is missing.	unitless

Variable	General Description	Detailed Description	How variable is calculated	How to handle missing or special values	Value labels
CES_D10	CES_D short form score	CES-D short form score calculated according to Andresen, E.M. and Malmgren, J.A. (1994). Screening for depression in well older adults: evaluation of a short form of the CES-D	1. For RRFHAPPY and RRFHOPE, use the following to convert the score: 1(rarely)=3, 2(some of time)=2, 3(much of time)=1, 4(most of time)=0: 2. For the remainder of the variables, use the following conversion 1(rarely)=0, 2(some of time)=1, 3(much of time)=2, 4(most of time)=3 3. Sum the score of the 10 items. (max=30, min=0)	If any item is answered 8 (Don't know) or 7 (Refused), set that item to missing. For 1 missing item, assign the average score of the answered items to the missing items. If >2 items are missing, CES_D10 is missing.	unitless

Analyst note: Although the range for the CES_D10 (short form) score is exactly half that of the CES_D (long form) score, there is no general agreement about how the scores compare. That is, there is not general agreement that the former can simply be doubled to make it analogous to the latter.

```
************************************************************************
*  Saved as  \\Fu-hsing-c\HABC\HABC_SAS\Calculated Variables\Programs\Year
11\CESD.Y11.sas
*
*  Ase Sewall - Modified year 10 program for use in Year 11
********************************************************************** ;

************************************************************************;
**  Create CES-D (CESD) Scores for Core Home Visit                     **;
************************************************************************;
************************************************************************;
** Checks, corrections made to calculation of CES-D:                  **
**  - Check that values >4 are set to missing (already done)          **
**  - Check that 4 vars reversed (ZCFGOOD, ZCFHOPE, ZCFHAPPY, and     **
**    ZCFENJOY)   (already done)                                      **
**  - Use scale of 0-3 instead of 1-4 (fixed here)                    **
**  - Set CES-D to missing if >=5 scores missing (fixed here)         **
**  - Fill in avg score for missing scores if <= 5 missing (fixed here)**
**                                                                    **
**  - Changed allowable number of missings from 1 to 2 for            **
**    CES_D10 score                                                   **
**                                                                    **
**Emily Scott                                              06/26/09  **
************************************************************************;

*DM LOG 'CLEAR' ; *DM OUTPUT 'CLEAR' ;

%include '\\Fu-hsing-c\habc\habc_sas\programs\initV8.sas';
libname calc '\\Fu-hsing-c\habc\habc_sas\calculated variables\datasets\Year 11';

options ls=90 ps=56 formchar='|----|+|---+=|-/\<>*' nodate nofmterr;

data CESD;
   set habc11.pf(keep=habcid pffbothr pffeat  pffblues pffgood pffmind  pffdown
pffeffrt pffhope
                      pfffail  pfffear pffsleep pffhappy pfftalk  pfflone
pffunfr  pffenjoy
                      pffcry   pffsad  pffdisme pffnogo pfcontac
where=(pfcontac=22));

  array c [20] c1-c20;
  array orig [20] pffbothr pffeat  pffblues pffgood
                  pffmind  pffdown pffeffrt pffhope
                  pfffail  pfffear pffsleep pffhappy
                  pfftalk  pfflone pffunfr  pffenjoy
                  pffcry   pffsad  pffdisme pffnogo;
  do i=1 to 20;
     c[i]=orig[i];
         if c[i]= 7 then c[i]=.R;
         else if c[i]> 4 then c[i]=.M;
      if i in (4,8,12,16) then c[i]=5-c[i];
      if c[i]>0 then c[i]=c[i]-1;
  end;

  AVG_CESD=mean(of c1--c20);
  nmiss=nmiss(of c1--c20);
  if nmiss=22 then do;
```

```
  if c1=.R then CES_D=.R;
  else if c1=.N then CES_D=.M;
  end;
  else if nmiss<=4 then do;
     if nmiss>0 then do i=1 to 20;
        *if c[i]=. then c[i]=AVG_CESD;  /* revised by Ase 2/26/2010 */
        if c[i] < 0 then c[i]=AVG_CESD;
     end;
     CES_D=sum(of c1--c20);
  end;
  else CES_D=.M;
  label CES_D='CES-D score';
  format CES_D 5.2;
run;

proc sort data=CESD ;
  by habcid;
run;

%macro skip ;
proc univariate data=CESD ;
  var CES_D;
run;
proc freq data=CESD;
  tables nmiss c1--c20 ;
run;

proc print data=CESD (where=(nmiss=22 )) noobs ;
   var habcid nmiss CES_D AVG_CESD c1-c20;
run;

proc print data=CESD (where=(nmiss>4 )) noobs ;
   var habcid nmiss CES_D AVG_CESD c1-c20;
run;
%mend skip ;

****Added 1/6/04:  Create short version score for comparison to years with CES-
D-short;

data CESD10;
   set habc11.pf(keep=habcid pffbothr pffmind  pffdown pffeffrt pffhope
                                 pfffear pffsleep pffhappy pfflone pffnogo
pfcontac  where=(pfcontac=22));
  array c [10] c1-c10;
  array orig [10] pffbothr pffmind  pffdown pffeffrt pffhope
                  pfffear pffsleep pffhappy pfflone pffnogo;
  do i=1 to 10;
     c[i]=orig[i];
         if c[i]= 7 then c[i]=.R;
         else if c[i]> 4 then c[i]=.M;
     if i in (5,8) then c[i]=5-c[i];
     if c[i]>0 then c[i]=c[i]-1;
  end;
  AVG_CESD=mean(of c1-c10);
  nmiss=nmiss(of c1--c10);
  if nmiss=10 then do;
    if c1=.R then CES_D10=.R;
```

```
    else if c1=.N then CES_D10=.M;
  end;
  else if nmiss<=2 then do;
     if nmiss>0 then do i=1 to 10;
        *if c[i]=. then c[i]=AVG_CESD;  /* revised by Ase 2/26/2010 */
        if c[i] < 0 then c[i]=AVG_CESD;
     end;
     CES_D10=sum(of c1--c10);
  end;
  else CES_D10=.M;
  label CES_D10='CES-D 10 short form score';
  format CES_D10 5.2;
run;

%macro skip ;
proc univariate data=CESD10;
  var CES_D10 AVG_CESD;
run;
proc freq data=CESD10;
  tables nmiss
         pffbothr pffmind  pffdown pffeffrt pffhope
         pfffear pffsleep pffhappy pfflone pffnogo/ list missing;
run;
%mend skip ;

data calc.Y11CESD;
        merge CESD (keep=HABCID CES_D)
              CESD10 (keep=HABCID CES_D10) ;
        by habcid;
run;

%macro skip ;
proc contents data=calc.Y11CESD;
 title4 'Final Dataset - Year 11 CESD';
run;
proc print data=CESD10 (where=(nmiss=10 )) noobs ;
   var habcid nmiss CES_D10 AVG_CESD c1-c10;
  title5 "Missing all 10";
run;
proc print data=CESD10 (where=(nmiss=1 )) noobs ;
   var habcid nmiss CES_D10 AVG_CESD c1-c10;
  title5 "Missing only 1";
run;
proc print data=CESD10 (where=(nmiss=2 )) noobs ;
   var habcid nmiss CES_D10 AVG_CESD c1-c10;
  title5 "Missing 2";
run;

%mend skip ;

***check for duplicates***;
data dupes;
  set calc.Y11cesd;
  by habcid;
  if not(first.habcid and last.habcid);
run;
```

```
proc print;
title4 'Duplicates in cesd Y11';
run;
```

Documentation for Reading Center Data (Y11Read)

YEAR 11 READING CENTER DATA (Y11READ).....137

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Appendix I HABC Reading Center Variable List: Peroneal Motor Nerve Conduction

Appendix II PMNC Edits

Appendix III HABC Reading Center Variable List: Gait Mat

Appendix IV Gait Mat Test Diagram

YEAR 11 READING CENTER DATA (Y11READ)

1. General description

The Year 11 reading center file contains "reading center" results of enrolled participants. In this case, the name is slightly misleading, as there is no reading center (center at which all data are reviewed), per se for peripheral motor nerve conduction (PMNC) or gait mat. However, the data are collected in each case outside of the Health ABC data system, so they are considered reading center data for this dataset. Each data record contains results from the following "reading centers":

Reading Center	N
Gait Mat	545
PMNC	1,112

Please refer to the Reading Center variable lists for detailed descriptions of the variables included.

2. Cross reference of dataset names with exact source

A complete list of variable names can be found under the "Proc Contents for All Datasets" link (search under Y11READ). Variable names can also be found on the Reading Center Variable Lists (Appendices I and III) . In addition, Appendix IV clarifies the gait mat variables diagrammatically.

3. Dataset structure and contents

The Y11READ file contains a single observation per participant.

Key variables:

HABCID	HABC Enrollment ID without the 2-letter prefix
SITE	HABC Clinic site: 1=Memphis; 2=Pittsburgh*
FLAGPMNC	Flag set to 1 if participant has PMNC data
FLAGGAIT	Flag set to 1 if participant has gait mat data

4. Condition of data

a. Gait Mat

There are no known problems with any Gait Mat data at this time.

b. Peripheral Motor Nerve Conduction (PMNC)

The PMNC reading center at the University of Pittsburgh reviewed the first 100 waveforms at each

* Must link to Health ABC participant history file (PH) to add this variable.

clinic site (N=200) and all flagged waveforms thereafter (N=276). Waveforms were flagged if any values were outside of clinically acceptable ranges (<1 mV for amplitude; <20 m/s or >70 m/s for velocity) or if the difference between the popliteal fossa and fibular head velocity was >10 m/s (N=40).

In cases where the difference between the popliteal fossa and fibular head velocity was >10 m/s, a second set of PMNC readings were collected. If both the 1st and 2nd sets of readings were deemed valid by the neurologist then they were averaged, if only one was valid then the valid reading was used, and if neither reading was valid (N=10) then the data were excluded.

If the participant had a valid waveform, but did not respond to the stimulation for either the popliteal fossa or fibular head, the amplitude was a '0' value. If the amplitude was '0', then the corresponding velocity is missing because velocity is a calculated value based on the stimulation (m/s=distance between proximal and distal stimulation sites / latency at the proximal stimulation site minus latency at the distal stimulation site). Therefore, if only participants with both amplitude and velocity data are analyzed, those with a non-response to stimulation will not be included.

If the neurologist determined that a participant had an invalid waveform, then the data associated with that waveform were set to missing. Based on the neurologist review of flagged waveforms, 163 participants' data were edited (14/200 within the first 100 waveforms at each clinic site and 149/276 with flagged waveforms thereafter). Additionally, 4 participants had extreme outlier values excluded for either popliteal fossa or fibular head amplitude (N=1 beyond Mean ± 5 SD), popliteal fossa or fibular head velocity (N=2 beyond Mean ± 4 SD), or change in amplitude (N=1 beyond Mean ± 6 SD). These are are documented in Appendix II.

A number of files have some or all data set to missing (.U, see special missing value codes, page 4). Although PMNCFLAG=1 for these cases, in 83 cases this resulted in a complete absence of usable PMNC data.

5. Dataset index formulation and key variable mapping

The Y11READ file is sorted by HABCID, which is a unique identifier for each participant.

6. General strategies for manipulating and merging the data

Because the Health ABC datasets are sorted by Health ABC Enrollment ID, the HABCID variable is most useful for merging with other datasets.

7. Special missing value codes

SAS allows for stratification of missing values. The following missing values have been assigned:

. ='Missing Form'

.L =’L:Permanently Lost’
.M ='M:Missing'
.T ='T:Missing Due to Technical Problems’
.U =’Unacceptable’

Description

. : Missing Form
Used when a value is missing because the entire form has not been entered or the participant does not exist in the database from the corresponding Reading Center.

B: Below Assay Range
Used when a measurement had such a low detection level that the value was recorded as less than a specific number instead of an exact number (e.g.., cholesterol < 100).
H: Above Assay Range
Used when the concentration of an analyte was so high that the value was recorded as above a specific number, instead of an exact number.

M:Missing
Used to flag missing values when the value is required (i.e., true missing values).

T:Missing Due to Technical Problems
Used when a value is missing from the Reading Center dataset due to technical difficulties. An explanation of when this value has been assigned can be found under strengths and weaknesses of (Reading Center) dataset items for each Reading Center (Reading Center data documentation).

U:Unacceptable
Used with certain Reading Center data when the data exist but cannot be used; for example, PMNC data when all fields were reviewed as unacceptable.

Appendix I
Health ABC Reading Center Year 11 Variable List
Year 11 PMNC Data

Variable Name	Variable Description	Label	Units
Y11AAMP	Ankle amplitude	Y11 Ankle Amplitude (mV)	mV
Y11PFAMP	Popliteal fossa amplitude	Y11 Popliteal Fossa Amplitude (mV)	mV
Y11PFCV	Conduction velocity between Popliteal fossa and ankle	Y11 Popliteal Fossa Conduction Velocity (m/s)	m/s
Y11FHAMP	Fibular head amplitude	Y11 Fibular Head Amplitude (mV)	mV
Y11FHCV	Conduction velocity between fibular head and ankle	Y11 Fibular Head Conduction Velocity (m/s)	m/s
Y11Y4PFAMP	Change in Popliteal Fossa Amplitude from year 4 to year 11 (if y11pfamp<1.0 and y4pfamp<1.0)	Change (Y11-Y4) in Popliteal Fossa Amplitude from Y4 to Y11	mV
Y11Y4PFCV	Change in Popliteal Fossa Conduction Velocity from year 4 to year 11	Change (Y11-Y4) in Popliteal Fossa Conduction Velocity from Y4 to Y11	m/s
Y11Y4FHAMP	Change in Fibular Head Amplitude from year 4 to year 11 (if y11fhamp<1.0 and y4fhamp<1.0)	Change (Y11-Y4) in Fibular Head Amplitude from Y4 to Y11	mV
Y11Y4FHCV	Change in Fibular Head Conduction Velocity from year 4 to year 11	Change (Y11-Y4) in Fibular Head Conduction Velocity from Y4 to Y11	m/s

Appendix II
PMNC Outlier Data Edits

Y11 Popliteal Fossa Amplitude (mV) excluded for value beyond Mean+5*Std or Mean-5*Std

HABC ID	Variable Name	Problem (Outlier)
5532	Y11pfamp	Y11pfamp=13.80 (*Outlier*), Y11pfcv=50.30. Y11pfamp and y11pfcv both excluded.

Y11 Popliteal Fossa Conduction Velocity (m/s) excluded for value beyond Mean+4*Std or Mean-4*Std

HABC ID	Variable Name	Problem (Outlier)
5039	Y11pfcv	Y11pfcv=18.60 (*Outlier*)
5162	Y11pfcv	Y11pfcv=69.40 (*Outlier*)

Y11 Fibular Head Conduction Velocity (m/s) excluded for value beyond Mean+4*Std or Mean-4*Std

HABC ID	Variable Name	Problem (Outlier)
5039	Y11fhcv	Y11fhcv=11.70 (*Outlier*)

Change (Y11-Y4) data excluded for valve beyond Mean+6*Std or Mean-6*Std

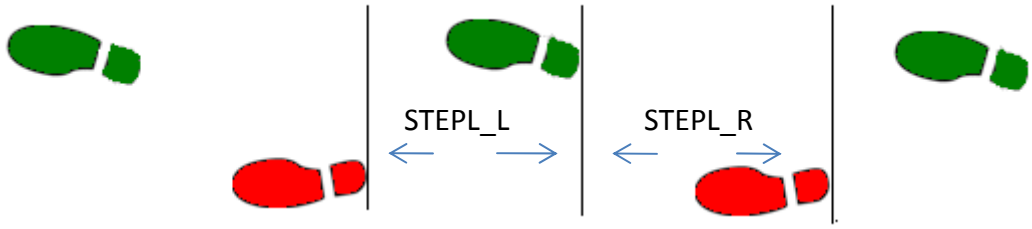
HABC ID	Variable Name	Problem (Outlier)
#1657	Y11y4pfamp	Y11y4pfamp=8.62 (*Outlier*) Y11y4fhamp=9.13 (*Outlier*)

Appendix III
Health ABC Reading Center Year 11 Variable List
Year 11 Gait Mat Data

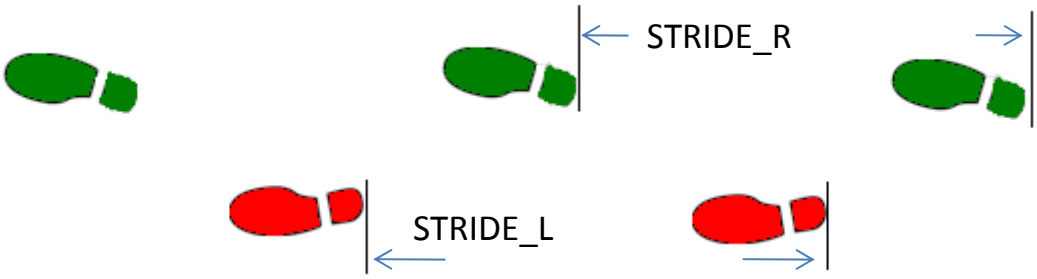
Variable Name	Variable Description	Variable Label	Value Label
Y11DSTim_L	Mean time when the right foot is in contact with the floor and the left heel strikes the floor, to the time the left toe lifts off of the floor, while the right foot is still in contact with the floor.	Mean double support time, left foot	seconds
Y11DSTim_R	Mean time when the left foot is in contact with the floor and the right heel strikes the floor, to the time the right toe lifts off of the floor, while the left foot is still in contact with the floor.	Mean double support time, right foot	seconds
Y11GaitVel	The distance between the first switch closure of the first and last steps divided by the time between the earliest closures of the first and last steps. Formula: **V = (last contact distance - first contact distance) /** (last contact time - first contact time)	Last-first contact distance/last-first contact time	m/sec
Y11SBase_L	The distance between the innermost switch closure for the left foot to the innermost switch closure of the right foot on the previous step.	Mean base of support (medial boundaries, left foot	meters
Y11SBase_R	The distance between the innermost switch closure for the right foot to the innermost switch closure of the left foot on the previous step	Mean base of support (medial boundaries), right foot	meters
Y11SSTim_L	Mean time when the right foot is swinging, which is from the time the right toe lifts off of the floor to the time the right heel strikes the floor. The left foot remains in contact with the floor	Mean single support time, left foot (equivalent to Y11SWINGT_R)	seconds
Y11SSTim_R	Mean time when the left foot is swinging which is from the time the left toe lifts off of the floor to the time the left heel strikes the floor. The right foot remains in contact with the floor	Mean single support time, right foot (equivalent to Y11SWINGT_L)	seconds
Y11Stance_L	Mean period when the left foot is in contact with the ground	Mean time left foot is in contact with ground, heel strike to toe lift	seconds

Variable Name	Variable Description	Variable Label	Value Label
Y11Stance_R	Mean time right foot is in contact with ground, heel strike to toe lift	Mean period when the right foot is in contact with the ground	seconds
Y11StepL_L	The mean distance between the first switch closure of right foot to the first switch closure of the left foot. (i.e. the distance traveled by the limb from initial contact of right foot to initial contact of the left foot)	Mean distance between right heel strike and left heel strike	meters
Y11StepL_R	The mean distance between the first switch closure of left foot to the first switch closure of the right foot. (i.e. the distance traveled by the limb from initial contact of left foot to initial contact of the right foot)	Mean distance between left heel strike and right heel strike	meters
Y11StepT_L	Time to complete one left step length	Mean time from right heel strike to left heel strike	seconds
Y11StepT_R	Time to complete one right step length	Mean time from left heel strike to right heel strike	seconds
Y11Stride_L	Mean distance traveled by the limb from initial floor contact of left foot to the next initial floor contact of the left foot	Mean distance between left heel strike and next left heel strike	meters
Y11Stride_R	Mean distance traveled by the limb from initial floor contact of right foot to the next initial floor contact of the right foot	Mean distance between right heel strike and next right heel strike	meters
Y11SwingT_L	Mean period when left toe lifts off the ground to the left heel strike (equivalent to Y11SSTIM_R)	Mean period when the left foot is off the ground	seconds
Y11SwingT_R	Mean period when right toe lifts off the ground to the right heel strike (equivalent to Y11SSTIM_L)	Mean period when the right foot is off the ground	seconds

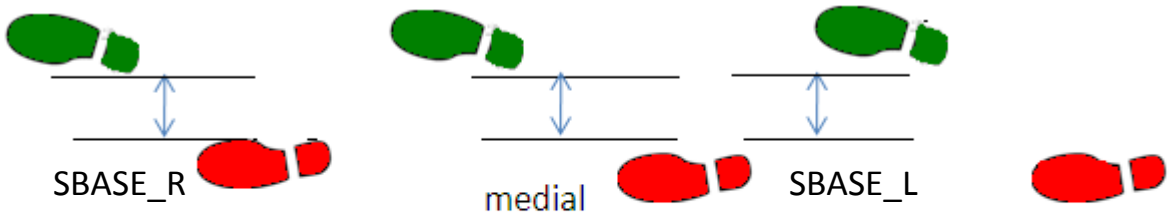
Appendix IV
Gait Mat Variable Diagram



Step Length

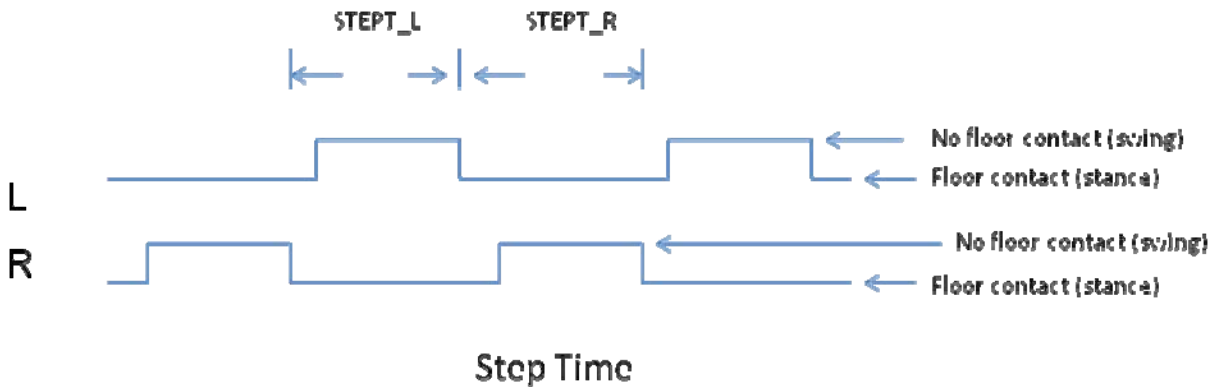


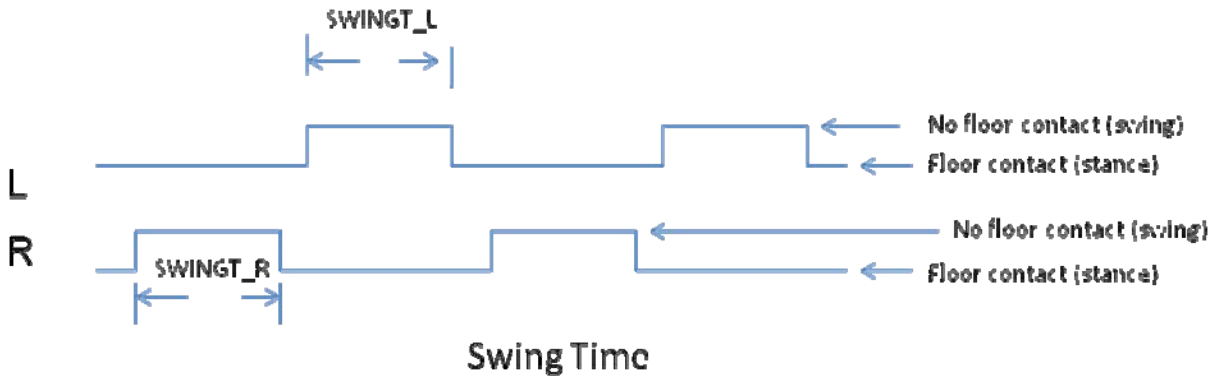
Stride Length

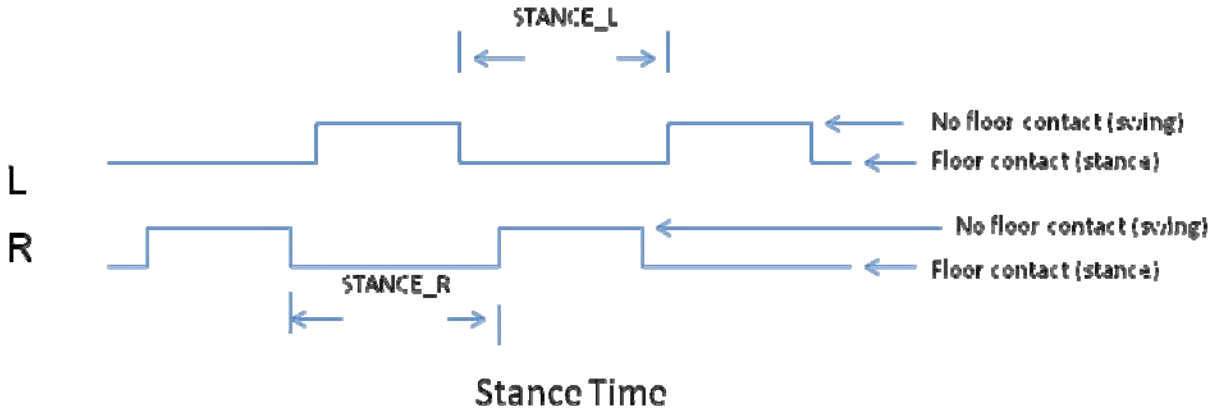


Support Base

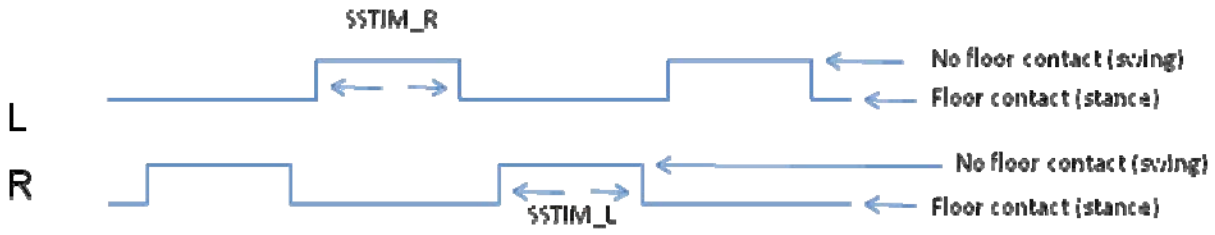
Appendix IV continued
Gait Mat Variable Diagram



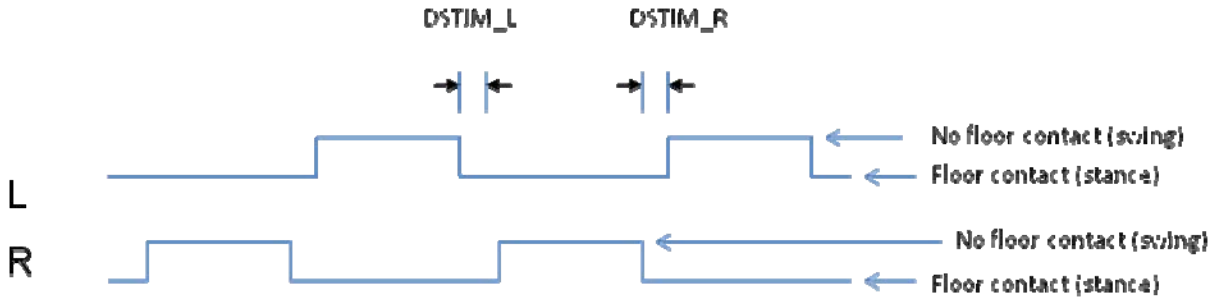




Appendix IV continued
Gait Mat Variable Diagram



Single Support Time



Double Support Time