THE STRONG HEART STUDY

Cardiovascular Disease in American Indians
(Phase III)

Operations Manual

Volume Seven

Data Entry

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DATA ENTRY FLOWCHART

* Verification works the same way as Data Entry

** Form "select" in the verification works the same way as in data entry
Introduction

This manual was developed to assist data entry personnel understand and use the programs developed for Phase III of the Strong Heart Study. Since the Cohort and Family data entry programs are similar, an understanding of one will enable the data entry operator to use the other. Therefore, only screens from the Family data entry program will be used in this manual. The following topics will be discussed: data entry/verification, editing data, entering field recruitment data, correcting data entry errors, data entry codes, transmitting data to the Coordinating Center, and data clean-up.

Before You Start

Before entering data, the data entry operator should screen each participant’s folder. This includes putting the forms in numerical order and skimming each form to make sure it has been filled out properly. If you find errors, contact the interviewer and correct them before you enter the data. Performing these preliminary steps will make the data entry process more efficient and less tedious. If you should have complications when using the data entry program, contact the Coordinating Center. Do not attempt to correct the program yourself.

Getting Started

To get started, double click the Cohort or Family icon in Windows ’95. The following menu will appear (Main Menu):

![Menu Image]

Please select one of the following options:
Data Entry

When one selects 'Data Entry', the following input box will appear:

PLEASE ENTER THE PARTICIPANT'S SHS IDNO.

After entering an ID number and pressing the 'Enter' key, another screen will appear:

FORMS ENTERED PREVIOUSLY FOR SHS IDNO

1. Personal Interview 1
2. Personal Interview 2
3. Smoking Questionnaire
4. Medical History
5. Reproduction and Hormone Use
6. RSS Questionnaire
7. Respiratory Questionnaire
8. Physical Examination
9. Diabetes Foot Screen
10. GTT Checklist
11. Risk Factors Knowledge Survey
12. Quality of Life Questionnaire
13. Cultural Factors Questionnaire
14. Modifiable Activity Questionnaire
15. CBC Results

SELECT FORM  RETURN TO MAIN MENU
If an ID number is displayed in the right hand column, that form has already been entered for that participant. This will help you keep track of which data has already been entered for a participant. In order to avoid incomplete records, we suggest that you complete all of the data entry for a participant before taking a break or leaving for the day.

To proceed, left click the button labeled ‘SELECT FORM’. You will see a screen like the one below. This is called the Select Form:

To begin entering data, left click Personal Interview Form One. After you exit the last field, a message box will appear asking you if you would like to open the next form.
If you select 'Yes', the next form, Personal Interview Two, will be opened and Personal Interview Form 1 will be closed. If you select 'No', the cursor will go back to the 'Main Menu'. If you select 'Cancel', you will remain in Personal Interview Form One. For all subsequent forms, except the last one (CBC Results), a message box prompting you for the next form will appear after exiting the last field. We suggest that once you exit a form you do not attempt to open it up again until you have completed entering the data for that participant.

After exiting from the last field of the last form (CBC Results), a message box like the following will appear:

```
You just finished this participant!!!
Do you want to...

1 Go back to the Main Menu
2 Enter the next participant
```

Verification

The process of entering data for 'Verification' is identical to 'Data Entry'. Since the data entry screens are also identical, we have placed a red colored 'V' in the upper left hand corner to help you differentiate between the two.

Edit/Browse

In order to edit data, you must select 'Edit/Browse' from the Main Menu. After selecting this button, another screen will appear asking you to select which database you would like to edit (next page):
Please select one of the following:

1. Edit First Entry
2. Edit Verification
3. Back to Main Menu

Once the database you want to edit/browse is selected, the Select Form (page 5) will appear. Choose the form you wish to edit/browse. Once you have made your selection, the form will open and the data entered for the first participant will be displayed. In order to find a specific participant do the following:

1) Make sure that the cursor is in the field 'IDNO'.

2) Use the mouse and left click 'Edit' on the menu bar at the top of the computer screen (not shown).

3) Select 'Find' by moving your mouse down to that option. You will know that the option is selected when it is highlighted. Now left click. Note that you can skip steps 2 & 3 by depressing the 'F' key while holding down the control key.

4) An input box will appear prompting you for an ID number. Type the ID number you want to locate in the box labeled 'Find What:'. Then, select 'Find First' which is to the right of the 'Find What:' input box.

Once you have finished making corrections, you must close the form manually. You can either go to the menu bar, left click on 'File', and select the option 'Close' or you can left click the 'X' which is located in the upper right hand corner of the screen and on the menu bar. Most of the time you will see two 'X's in the upper right hand corner. Make sure you select the 'X' that is in line with the menu bar (the bottom one) or you will exit Access. After you close the form you will return to the Select Form.
Entry of Field Recruitment Data (Family Study Only)

To enter recruitment forms select the button labeled 'Recruitment' from the Main Menu. The following screen will appear:

Genetics of Cardiovascular Disease
Field Recruitment

Please select one of the following options:

- Data Entry
- Edit/Browse
- Back to Main Menu

If you select Data Entry or Edit/Browse, the following screen will appear (Recruitment Select Form):

Genetics of Cardiovascular Disease
Field Recruitment

- Participant Interview (Pages 1 - 4)
- Your Children
- Additional Siblings
- Deceased
- Additional Children
- Parents
- Go Back
- Participant Interview (Pages 5 - 7)
- Siblings
- Grandparents
In Data Entry mode the forms are not linked. This means that once you finish a form you will be prompted by a message box to go back to the Recruitment Select Form or stay in the current form. Therefore, after completing a form you must return to the Recruitment Select Form and choose another section of the form you wish to enter.

Edit/Browse works the same way as in Family and Cohort data entry programs. You must manually close the form once you have edited or browsed your selection.

Making Corrections

In order to produce a data entry program which is user friendly and selective about the data entered, skip patterns and message boxes have been added. Unfortunately, the same features which are intended to help the data entry operator can be a source of frustration when one is trying to correct errors, unless you follow these suggestions.

We will discuss two different situations. A data entry error noticed BEFORE exiting the field, and a data entry error noticed AFTER exiting the field in question.

1) Error noticed BEFORE exiting the field.

Solution: Use the backspace key to remove the error and enter the correct value.

2) Error noticed AFTER exiting the field.

Solution: We suggest that you use the mouse to reenter the field with the mistake. If you can see the field, place the I-bar in the field and left click. Make your correction and continue with the rest of the form. If after exiting the field that contains the error Access moves to the next page, use the mouse to move the scroll bar (located on the right hand side of the screen) up until you see the field you wish to correct. Left click in the field and make your correction.

When attempting to reenter a field that contains an error, this message box may appear (next page):
NOT ALLOWED!
You cannot leave this field blank.

Solution
If the question was not answered: 7=Missing, 8=Refused, and 9=Unknown

This means that you are trying to leave a field that requires an entry. First, select 'OK' on the message box. Then, respond to the question, but **DO NOT PRESS 'ENTER'**. Now you can use the mouse to reenter the field with the error and correct it.

If you notice an error after the form is closed, make a note of it and correct it after completing all of the forms for that participant.

Data Entry Codes

In some cases, the participant responding to a question may not know the answer or refuse to answer the question. Some questions have these options listed while others do not. For those that do not, the interviewer should indicate these responses by putting a question mark for unknown or drawing two lines through the box for refused. Since the data entry program will not allow the operator to use these symbols, we have developed codes which can be used instead. It was not possible to use the same code for every type of field (e.g. Text, Numeric, etc.), but we tried to make the codes as consistent as possible. Finally, if a question is not answered and there is no indication that the participant did not know or refused, we classify this as missing. The following is a list of data entry codes by variable type.

**Text variables** (Questions which have options listed or are not quantitative):

7  =  Missing
8  =  Refused
9  =  Unknown
Numeric variables (Questions requesting quantitative information such as measurement data):

777 = Missing
888 = Refused
999 = Unknown

Time variables (Questions requesting the time of an event):

00:07 = Missing
00:08 = Refused
00:09 = Unknown

Date variables (Questions requesting the date of an event):

01/01/1007 = Missing
01/01/1008 = Refused
01/01/1009 = Unknown

Note: if only the year is known use: 01/01/year
if only month and year are known use: month/01/year

Currency variables (Questions requesting a dollar amount):

$777.00 = Missing
$888.00 = Refused
$999.00 = Unknown

If you are not sure which variable type you are working with, leave the field empty and press ‘ENTER’. This will cause a message box to appear telling you that the field cannot be left blank, but it will also tell you what codes are appropriate for that field. Select ‘OK’ and enter the appropriate response.

Guidelines for Data Entry and Verification

To reduce the likelihood that a data entry error will be repeated during verification, data entry and verification should not be done by the same person. We understand that this is not possible at all field sites. If the same person is performing both data entry and verification, here are two suggestions:

1. For a specific participant, do data entry and verification at least a day apart.

OR
2. If both data entry and verification must be entered on the same day and you have data for more than one participant:

   i) Do data entry for all of the participants, then
   ii) Do verification for all of the participants in the same order that data entry was performed.

   We prefer that you follow #1. Which ever suggestion you follow, make sure that it doesn’t conflict with transmitting complete sets of data. In other words, make sure that you have completed both data entry and verification for each participant before transmitting.

Transmitting Data to the Coordinating Center

   In order to minimize potential problems (e.g. missing data), we feel that the following suggestions should be followed when possible.

   1. Transmit complete sets of data. This means all forms ('Data Entry' and 'Verification') for each participant should be sent to the Coordinating Center (CC) in the same transmission.

   2. For each transmission, e-mail (to Joss at jlangevi@etowah.uokhsc.edu) a separate list of the SHS ID numbers that you are transmitting to the CC.

   3. After the data for a particular participant has been transmitted, do not edit his/her file. **All post-transmission changes of a participant’s file will be done at the CC.**

Backup Protocol

   Each data entry system has been supplied with a Zip disk labeled "SHS3 Data Backup". This disk should be used for routine backups after each data entry session. For further data security, we recommend that at least three additional disks for each system be acquired and set up as backup disks (simply copy the files from the main backup disk onto a blank Zip disk), to be used as follows:
Disk #2: Secondary backup at intervals of 1-2 weeks, to be stored "offsite"; i.e., in a different room (and preferably in a different building) from the one where the data entry system resides.

Disk #3: Tertiary backup, performed monthly (may be stored with system).

Disk #4: "Spare" - not routinely used, but kept on hand for quick substitution in case one of the other backup disks fails.

Note: For the backup routines (from the Main Menu in the data entry applications) to complete successfully, the Zip disk being used at that time must contain a copy of the backup files which were supplied with the current version of the data entry software. In other words, if the files on the main backup disk are replaced as part of a data entry software upgrade, then the files on the secondary, tertiary, and spare backup disks must also be upgraded.

Data Clean-Up

The CC will be responsible for identifying: missing forms, orphan records (records which do not belong to any participant according to the SHS ID number listed on the form), incomplete forms, discrepancies between 'Data Entry' and 'Verification', and values which appear to be unreasonable. The field sites will be responsible for providing information to the CC so that the aforementioned problems can be rectified.

Data clean-up will occur in two stages.

Stage One: Raw data is transmitted to the CC. Incomplete items and discrepancies between 'Enter' and 'Verify' are listed and sent to the field via e-mail. The field will e-mail back corrections within five working days. The CC will make corrections to the database.

Stage Two: Statistical checks will be performed to identify unreasonable values. These items will be listed and sent to the field. Verification of the suspect data will be performed by field personnel. A response (e-mail) is expected within five working days.
Upon completion of both stages, cleaned records will be appended to the Main Database. Please note that the Main Database will be used to perform analyses for reports and publications. Therefore, if a field site were to identify any data entry errors after data clean-up has been completed, they must notify the CC promptly.

In cases where there are many data entry errors found in stage one of data clean-up, the CC may request that changes to a specific record be made at the field and said records be retransmitted.

If You Have Questions

So that your questions may be answered efficiently, please address your queries to the following personnel:

Data Transmission/Data Backup - Leon Kalbfleisch
Data Entry Programs - Ya-Jiun Brower
Data Clean-Up - Joss Langevin
Forms - Dr. Jeunliang Yeh