

# EpilInfo/ENA

## Manual

### Overview:

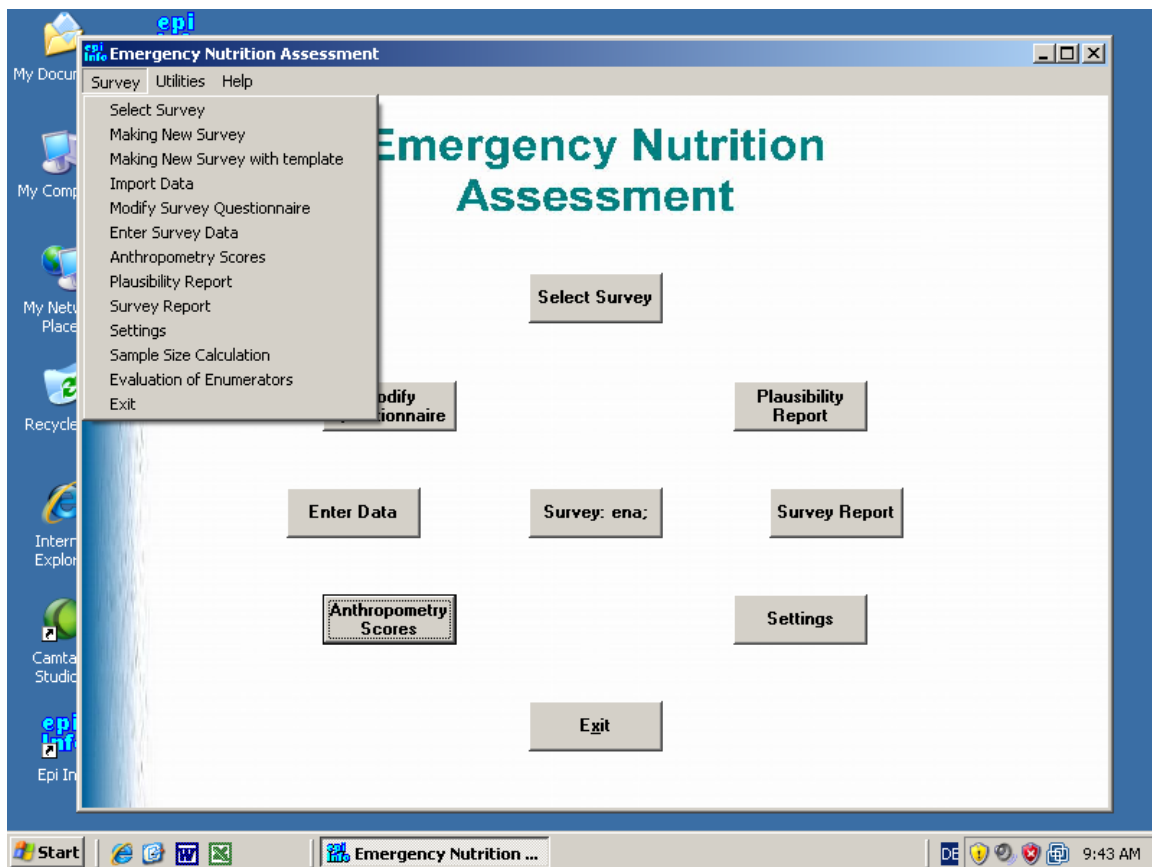
The purpose of EpilInfo/ENA is to combine the advantages of the two software programs ENA for SMART and EpilInfo.

ENA for SMART is a user-friendly software to analyze data from mortality and nutrition surveys: to generate anthropometric scores, perform automated analyses of anthropometry and mortality data, perform data quality checks and generate report templates with populated data tables.

EpilInfo provides sophisticated functions for data entry, management and advanced statistical analysis.

The combined software provides an opportunity to enter data with EpilInfo, to evaluate the results with ENA for SMART and to do further statistical analyses with EpilInfo.

The following screen shows the menu of EpilInfo/ENA.



The buttons in this menu enable to:

- select an existing survey (the current active one is shown in the central button),
- create or modify the survey questionnaire,
- enter data,
- generate the anthropometry scores (z-scores, % median, flags, etc) of the survey,
- get the automatic reports (data quality check and survey report) and
- change the settings of the software.

Some more special functions like sample size calculation or training of the teams for anthropometric measurements can be accessed via Survey in the Pull Down Menu. In EpiInfo/ENA a survey usually consists of a questionnaire and a data table. The questionnaire is necessary for data entry but for the analysis of a survey only a data table is necessary to get the automatic reports.

The sequence on how to use the program depends on how data is entered or imported into the software.

There are three possibilities:

1. Creating a survey questionnaire from scratch and entering the survey data
2. Creating a survey questionnaire using the template from ENA and entering the survey data
3. Importing already entered survey data from another software

All three procedures can be accessed via Survey from the Pull Down Menu. After the survey data is entered or imported into the EpiInfo/ENA program, the steps for analyzing survey data are the same for each of these options.

In the following sections the installation and functions of the software are described. For the details on handling EpiInfo and interpretation of the automatic reports from ENA for SMART please check the manual and training guides of EpiInfo ([www.cdc.org/epiinfo](http://www.cdc.org/epiinfo)) and the manual of ENA for SMART ([www.smartindicators.org](http://www.smartindicators.org)). This short manual is mainly explaining the things which are specific for EpiInfo/ENA. At <http://www.cdc.gov/nceh/ierh/ResearchandSurvey/enasoftware.htm> there are also several demofilms available which provide the easy-to-use basic tutorial of principal steps in operating EpiInfo/ENA.

## Installation of the software:

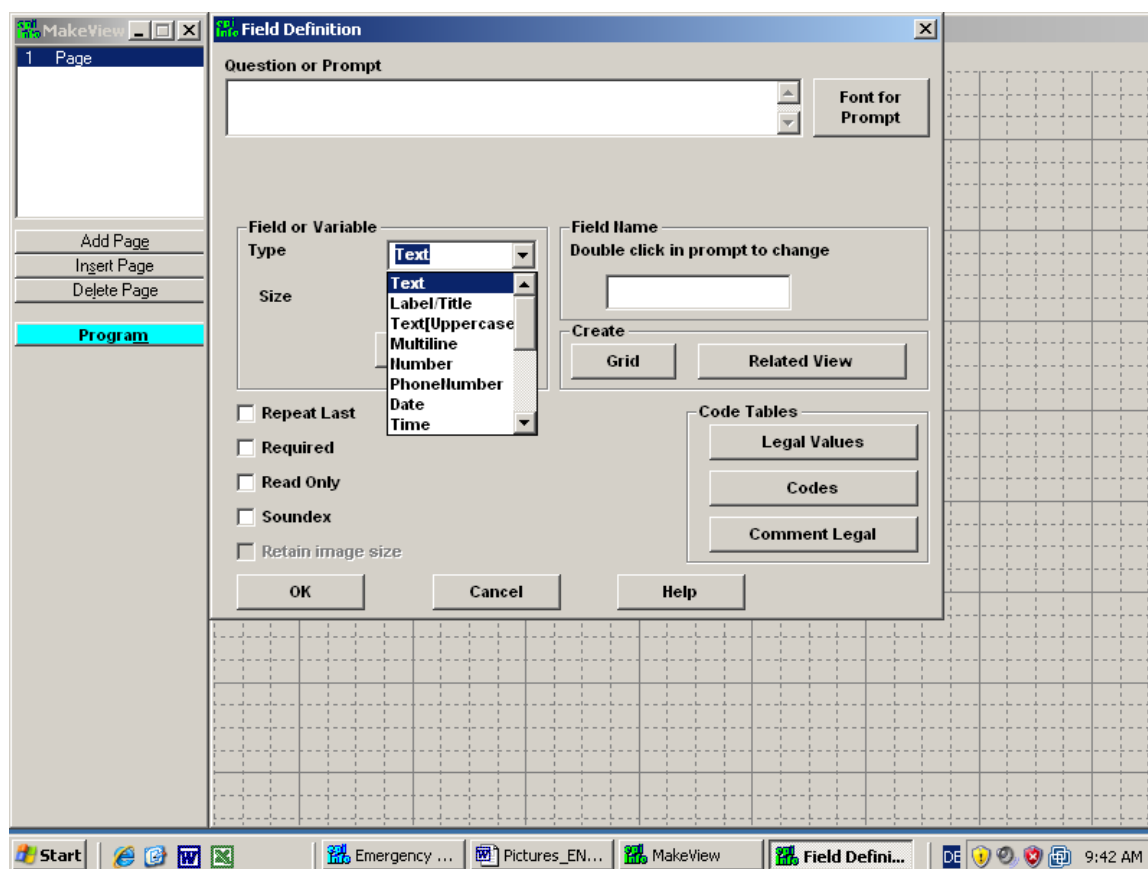
To install EpiInfo/ENA:

1. Install EpiInfo from [www.cdc.org/epiinfo](http://www.cdc.org/epiinfo). During installation, make sure that the installation directory is C:\Epi\_info.
2. After the installation of EpiInfo is finished, download the installation file for ENA (enaepi.exe) at <http://www.cdc.gov/nceh/ierh/ResearchandSurvey/enasoftware.htm> and start the enaepi.exe file. The installation program automatically creates the **ena** folder in EpiInfo (c:\epi\_info\ena) and copies there the program files. Additionally a shortcut is put on the desktop to enable the direct access to the software.

To uninstall ENA for EpiInfo delete the **ena** folder (c:\Epi\_info\ena) and the shortcut icon on the desktop.

Please note that all the survey data which are entered and imported into EpiInfo/ENA are saved in the file **ena.mdb** in the directory c:\Epi\_info\ena. Therefore this is the only file for which a backup is necessary. Everything else can be reinstalled and restored from the websites.

## Creating a survey questionnaire from scratch



To create a questionnaire for data entry from scratch:

- Go to menu option 'Survey/Making New Survey'. EpiInfo opens the Make View function which allows to create a data entry form with a variety of possibilities to enter data and to check the validity of the entered data.
- For details on how to create a questionnaire in EpiInfo check the online help of MakeView or the manuals from the EpiInfo website.
- For the convenience of data entry the electronic questionnaire should look as much as possible the same as the paper questionnaire, have the same page layout, sequence of questions, etc.
- Very important: after the questionnaire is finished save it under a new name in ena.mdb file (c:\Epi\_info\ena\ena.mdb). If it is not saved in this location, EpiInfo/ENA will not be able to analyze data.
- Select this survey questionnaire with 'Select Survey' button from the main menu of EpiInfo/ENA. The central button shows then the name of the current active survey and survey data can be entered or analyzed.

Below are more detailed instructions on how to create a few types of fields (questions) commonly used in the surveys. For more detail on how to create the view in EpiInfo refer to the manuals on EpiInfo website

### A. Open the blank Make View page

Select **Survey/Making New Survey** on the top menu.

**Make/Edit view** window will open.

Select **File/New** on the top menu

**Create or Open Project** window will open

Browse to c:\Epi\_info\ena\ena.mdb and click Open

**Name the View** window will open

Type the name of the survey data file (for example, Kenya1), click OK

The blank view (questionnaire) is now created and saved under the name Kenya1 in ena.mdb file

## **B. Create basic fields:**

### **a. title/label**

Select **Insert/Field** on the top menu or right-click on the empty questionnaire

**Field Definition** window will open

Type *Kenya 1 Survey* in the **Question or Prompt** field

Select font size and style using button **Font for Prompt** on the right

Select **Label/Title** in **Field or Variable Type** field

**Field Name** will be filled automatically, if you want to edit field name, double click on the text

Click OK. You will see the label created

To move label or other field around, click and drag the field using your mouse

### **b. text field**

Select **Insert/Field** on the top menu or right-click on the empty questionnaire

**Field Definition** window will open

Type *Village Name* in the **Question or Prompt** field

Select font size and style using button **Font for Prompt** on the right

Select **Text** in **Field or Variable Type** field

**Field Name** will be filled automatically, if you want to edit field name, double click on the text

*Note that Field Name will be the name of this variable in the data table, so make sure you edit it as you like. After you start entering data into this view the field name cannot be changed anymore*

Click OK. You will see the question (field) created

To move the field around, click and drag the field using your mouse

### **c. text field with legal values**

Text field with legal values is needed when you have pre-defined options for the text field (for example, sex can be only Male and Female)

Select **Insert/Field** on the top menu or right-click on the empty questionnaire

**Field Definition** window will open

Type Sex in the **Question or Prompt** field

Select font size and style using button **Font for Prompt** on the right

Select **Text** in **Field or Variable Type** field

**Field Name** will be filled automatically, if you want to edit field name, double click on the text

*Note that Field Name will be the name of this variable in the data table, so make sure you edit it as you like. After you start entering data into this view the field name cannot be changed anymore*

Click on **Code Tables/Legal Values** in the right bottom corner

Set Up Code/Legal Links window will open

Click **Create New** button

In new text field on the left type *Male*, click Enter and type *Female*

Check **Do not sort** box

Click OK and again OK. You will see the question (field) Sex created

Click on arrow on the right end of the field to see the legal values for this field

#### d. numeric field, specify number of digits before and after comma, put range

This type of field is for entering numeric data, such as height, weight or cluster number  
Select **Insert/Field** on the top menu or right-click on the empty questionnaire

**Field Definition** window will open

Type *Height* in the **Question or Prompt** field

Select font size and style using button **Font for Prompt** on the right

Select **Number** in **Field or Variable Type** field

In **Pattern** field enter the number of digits and decimal places using pound signs, for example for height in centimetres we need to allow for 3 digits and one decimal place, therefore enter *###.#*

**Field Name** will be filled automatically, if you want to edit field name, double click on the text  
*Note that Field Name will be the name of this variable in the data table, so make sure you edit it as you like. After you start entering data into this view the field name cannot be changed anymore*

In this field you can also specify range. For example, if you survey children 6-59 months you would not expect height to be lower than 50 cm and more than 120 cm.

Check the **Range** box. Range fields will appear. Enter lower and higher range values, for example enter 50 in Lower and 120 in Higher.

Click OK. You will see the question (field) created

To move the field around, click and drag the field using your mouse

#### e. date field with different formats

This type of field is for entering date, such as date of birth or date of survey

Select **Insert/Field** on the top menu or right-click on the empty questionnaire

**Field Definition** window will open

Type *Date of Birth* in the **Question or Prompt** field

Select font size and style using button **Font for Prompt** on the right

Select **Number** in **Field or Variable Type** field

In **Pattern** field select date format

**Field Name** will be filled automatically, if you want to edit field name, double click on the text  
(for example, change this to *DOB*)

*Note that Field Name will be the name of this variable in the data table, so make sure you edit it as you like. After you start entering data into this view the field name cannot be changed anymore*

In this field you can also specify acceptable range of dates. For example, if you survey children 6-59 months and data collection takes place on January 1, 2008, you would only accept children whose birthdate is after January 1, 2003 and before July 1, 2007.

Check the **Range** box. Range fields will appear. Enter lower and higher range values, for example enter 01-01-2003 in Lower and 01-07-2007 in Higher.

Click OK. You will see the question (field) created

To move the field around, click and drag the field using your mouse

### C. Create and name new page

When you run out of space on the first page, you can create more pages and continue making fields.

To add page, go to the narrow window on the left of your screen and click **Add Page**.

New blank page is created after the existing page, and the line 2 *Page* is added in the small window in the upper left corner.

You can now start entering fields on this page.

Note that if you do not enter any questions and switch to other page or close the questionnaire, this page will be deleted.

If you want to rename the page, right-click on 2 *Page* in the small window on the left side and enter new name of the page.

Note, if you click on **Insert Page** instead of **Add Page**, the new page will be created before (not after) the existing page.

The button **Delete Page** on the left side will delete your current page.

#### **D. Change background color**

With EpiInfo you can change appearance of the pages and do many other formatting changes using **Format** menu option in the top menu, about which you can learn in detail from the manuals on EpiInfo website.

For example, to change the background color of the page select Format/Background.

**Background** window will open.

Click on **Change color**, select the color in the small window, and click OK.

On the bottom of the **Background** window select whether you want this color to apply only to current page or to all pages in the questionnaire. Click OK.

The background color has now changed.

#### **E. Edit or delete the field that you already created**

Double-click on the field. **Field Definition** window will open.

Make your edits and click OK.

If you want to delete the field, double click on the field and click **Delete** in **Field Definition** window.

#### **F. Save, close and open view in ena.mdb file**

When you have finished your questionnaire, you need to save and close it.

Select **File/Save** and then **File/Exit**.

The New Data Table window will appear asking whether you want to create a data table for this questionnaire.

Click OK if you want to create a data table, click Cancel if you don't.

Note, if you click OK and data table is created, you can no longer change **Field Name** in **Field Definition** window.

If you want to add new questions to your view later, to open your view (questionnaire), Select **Survey/Making New Survey** on the top menu of the main EpiInfo/ENA screen.

**Make/Edit view** window will open.

Select **File/Open** on the top menu

**Create or Open Project** window will open

Browse to c:\Epi\_info\ena\ena.mdb and click Open

Select the view you want to open (for example, Kenya1), click OK.

# Making a survey with the questionnaire template of EpiInfo/ENA

The screenshot displays the MakeView application window titled 'Make/Edit View: C:\EPI\_INFO\ENA\ENA.MDB:ENA Page:1'. The main area shows a questionnaire form with the following fields: Survey Date, Cluster, Team, ID, Household, Sex (with a dropdown arrow), Birthdate, Months, Weight (kg), Height (cm), Edema, and MUAC. The form is set against a grid background. On the left side, there is a sidebar with buttons for 'Add Page', 'Insert Page', 'Delete Page', and a highlighted 'Program' button. The Windows taskbar at the bottom shows the Start button, icons for Internet Explorer, Word, and Excel, and several open application windows including 'Document1 - Micros...', 'Emergency Nutritio...', and 'MakeView'. The system clock shows 8:16 AM.

Since EpiInfo/ENA requires a standard set of variables it may be useful to start a new survey with the questionnaire template from EpiInfo/ENA and to add in this questionnaire the questions which are additionally necessary. To do this go to 'Survey/Making New Survey with template' and the MakeView program from EpiInfo opens the ENA questionnaire template. To avoid changing the master ENA template, copy and save this template under a new name before starting to modify it. Go first to 'File/Copy View' to copy the questionnaire, give the questionnaire a new name and then open this new questionnaire with 'File/New'. After this you can add and modify the questions in the questionnaire as you like.

Below are more detailed instructions on how to save and modify existing template. For more detail on how to create, copy and modify the view in EpiInfo refer to the manuals on EpiInfo website

## A. Open ENA questionnaire template

Select **Survey/Making New Survey with template** on the top menu. The ENA template view will open in the **Make/Edit view** window.

## B. Copy it under a new name

Select **File/Copy View** on the top menu.

**Copy view as...** dialogue box will open.

Select **Make New View Only** option. Select **Copy code tables** option in **Code Options** section. Click OK.

**Destination file-MDB** window will open



Browse to c:\Epi\_info\ena\ena.mdb and click Open

**Copy Rename Tables** window will open.

In **New Table name** column, type the name of your questionnaire preceded by the word *view* (for example, if you want to name your questionnaire *Kenya2*, type *viewKenya2*).

Click OK.

The template questionnaire is copied now under a new name in the same file ena.mdb.

Now you can open it using the new name you assigned, make changes, add new questions, etc to match the questionnaire that you will be using in your survey.

See previous section **Creating a survey questionnaire from scratch** to learn how to:

- open the questionnaire
- add new questions or pages to the questionnaire
- save and close the questionnaire

# Entering data into the questionnaire

This section will briefly describe how to open your questionnaire in data entering mode (as opposed to editing mode we described above), and how to enter data. For more detail on how to enter data into the view in EpiInfo refer to the manuals on EpiInfo website

## A. Select (activate) your questionnaire (view)

Let's say you want to select your questionnaire which is called Kenya1.

Click **Select Survey** button on the main screen.

**Select Survey** dialogue will open.

Type the name of your questionnaire, for example *Kenya1*. Click OK.

The name of your questionnaire should be showing now on the button in the center of the main screen

## B. Open your questionnaire (view) for data entry

When the questionnaire is selected and its name is showing on the button in the center of the main screen, you can open this questionnaire in 2 ways:

1. Click **Enter Data** button.
2. Select **Survey/Enter Survey data** from the top menu

The questionnaire will open for data entry.

Note: when you open the view to enter data for the first time, and data table for this view have not been created yet, the screen will appear informing you that data table will be created for this view. Click OK to proceed to data entry.

## C. Entering data

Enter data by typing data into the fields.

Select legal values, check boxes etc., using your mouse

## D. Moving from field to field and from page to page

Move from field to field using mouse, Tab button or Enter button

You can go to a different page of the view by selecting page in the small window at the top on the left side

## E. Navigating between the records you entered

On the left-hand side, under the **Record** section, click on the arrows to navigate the entered records.

The << sign brings the data-entry screen to the first record, while the < sign brings the data-entry screen to the previous record.

Conversely, the > brings the data-entry screen to the next record, and the >> brings the data-entry screen to the last record.

To go directly to a specific record number, click in the white box, type in the record number and press Enter on the keyboard.

## F. Save entered data and exit

Select **File/Save** and then **File/Exit**

# Importing survey data from another software

For the analysis of data in EpiInfo/ENA the program doesn't need a questionnaire. A simple data table is sufficient. To import data select 'Survey/Import Data'. The analysis function of EpiInfo opens and it is possible to import data with the Read (Import) function on the left side. A window opens then which asks for the Data format of the file which has to be imported and the Data Source. After the file is imported the survey has to be saved into the ena.mdb file with the Write (Export) function.

Below are more detailed instructions on how to import data table into EpiInfo. For more details refer to the manuals on the EpiInfo website

## 1. Open in EpiInfo survey data file which is in Excel or other format

For example, you want to analyze survey data which is now in Excel format (file name Kenya3.xls) in the location C:\Epi\_info\ena\ Kenya3.xls

Select **Survey/Import Data** from the top menu.

The Analysis program of EpiInfo will open. Commands are listed in the left window.

Click on **Read (Import)** command in **Data** section.

**Read** dialogue box will open.

In **Current Project** line, make sure that c:\Epi\_info\ena\ena.mdb file is showing.

If not, change it to c:\Epi\_info\ena\ena.mdb using **Change Project** button on the bottom of the window.

In **Data Formats** line select data format that corresponds to the file you are importing (in this case, select Excel 8.0 format)

In **Data Source** line click on ... button on the right and browse to the file you are importing (in this case browse to C:\Epi\_info\ena\ Kenya3.xls). Click Open.

In **Worksheets** window highlight the worksheet with your survey data. Click OK.

Your data file is now open in EpiInfo.

The script in the upper right window **Analysis Output** shows the path to the file and the number of data records found in this data table.

## 2. Save the file in EpiInfo format in ena.mdb database under a new name

Click on **Write (Export)** command in **Data** section.

**Write** dialogue box will open.

If you wish to import all the variables from your data set, make sure that **All (\*)** box in the upper left corner is checked.

Check **Replace** in **Output Mode**.

In **Output Formats** window select **Epi 2000**.

In **File Name** line click on ... button on the right and browse to the file in which you want to save your table -- c:\Epi\_info\ena\ena.mdb

In **Data Table** window type the name of the survey data set you are importing (for example, type *Kenya3*)

Click OK. Your data is now saved as a new table named Kenya3 in ena.mdb file.

## 3. Open the new survey table from ena.mdb file

You can now check whether the data table is imported by opening this imported table.

Click on **Read (Import)** command in **Data** section.

**Read** dialogue box will open.

In **Current Project** line, make sure that c:\Epi\_info\ena\ena.mdb file is showing.

If not, change it to c:\Epi\_info\ena\ena.mdb using **Change Project** button on the bottom of the window.

In **Data Formats** line select **Epi 2000**

In **Data Source** line click on ... button on the right and browse to c:\Epi\_info\ena\ena.mdb  
Click Open.

In **Show** section select **All**.

In All window highlight the table you just imported (in this case Kenya3). Click OK

Your imported table located in ena.mdb file is now open in EpiInfo.

The script in the upper right window **Analysis Output** shows the path to the file and the number of data records found in this data table.

You can now close Analysis program windows.

#### **4. Select new survey using Select Survey button on main menu screen**

To perform automated analysis on your imported data, you now need to select (“activate”) your data table on the main EpiInfo/ENA screen.

Click **Select Survey** button on the main screen.

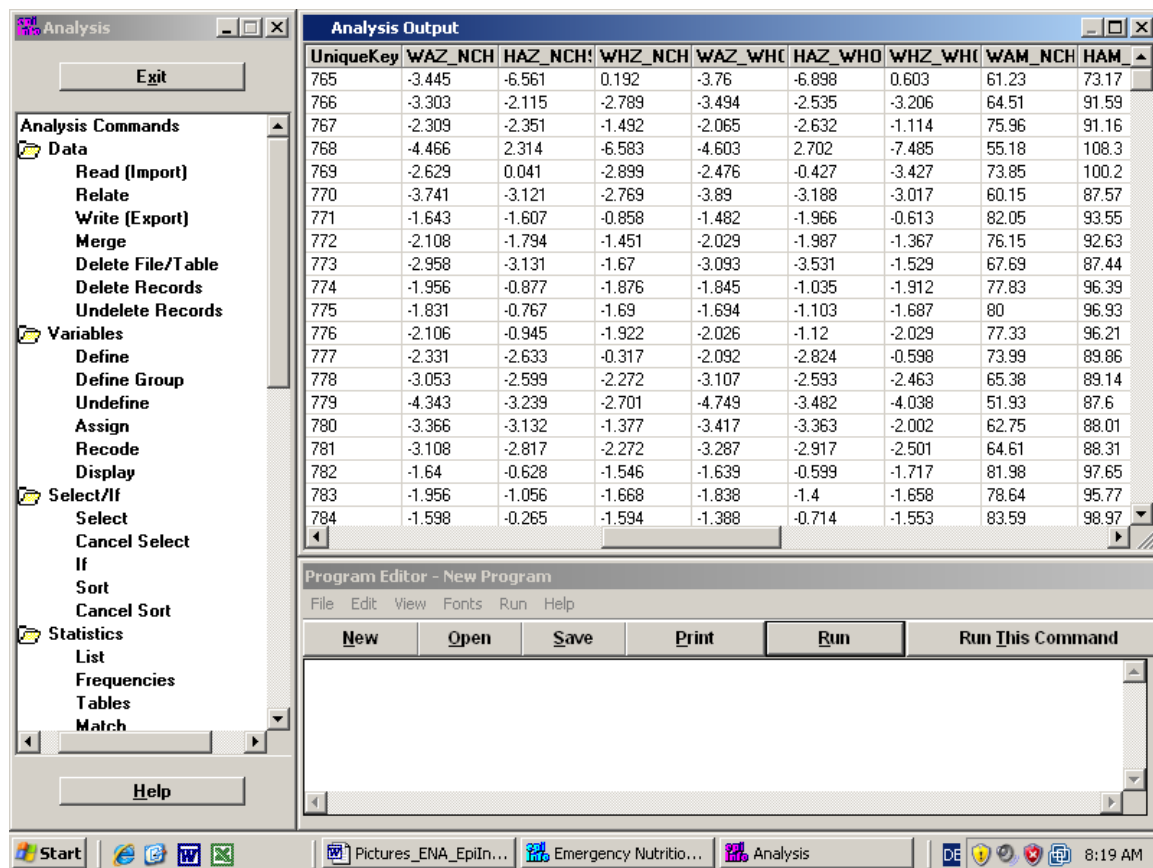
**Select Survey** dialogue will open.

Type the name of your data table, for example *Kenya3*. Click OK.

The name of your data table should be showing now on the button in the center of the main screen

Your data table is now ready for automated analysis.

## Generating the anthropometric indicators of a survey



To generate the z-scores of a survey, select the 'Anthropometry Scores' button from the main screen. Before anthropometry score are generated, the variables which are necessary for the z-score calculation have to be matched with the names that EpiInfo/ENA is using. After anthropometry scores are generated, EpiInfo includes them as new variables into the original survey data table, and opens it the Analysis function of EpiInfo. This table can now be saved under a new name, and further analyses performed using EpiInfo Analysis program.

Instructions below provide more detail on how to generate anthropometry scores and save the newly generated data table with anthropometry variables added to the original dataset.

### 1. Select survey button

To generate anthropometry scores from your data, you need to select ("activate") your data table as described in the previous section:

Click **Select Survey** button on the main screen.

**Select Survey** dialogue will open.

Type the name of your data table, for example *Kenya3*. Click OK.

The name of your data table should be showing now on the button in the center of the main screen

Your data table is now ready for automated analysis.

### 2. Anthropometry scores button

Click **Anthropometry Scores** button.

Select Survey window will appear where you need to match variables.

### 3. Matching variables screen, make sure they check all matching because program sometime can automatically match wrong variables

The names of variables in the left column are fixed.

The fields in the right column have drop-down lists with all the variables in your dataset. You need to select in each field the variable from your dataset that matches the variable on the left.

For example, HEIGHT variable on the left needs to be matched with the variable in your dataset that has height data on the children, and so on.

**Note that:**

- HEIGHT variable must be expressed in centimetres
- WEIGHT variable must be expressed in kilograms
- EDEMA variable must be expressed as y/n, 1/0 or yes/no
- SEX variable must be expressed as 1/2, M/F or Male/Female
- MONTHS variable (age of the children) must be expressed in months

**Note:**

As a default EpiInfo/ENA will automatically calculate child's age from date of birth and date of survey if both dates are available. In this case age provided in MONTHS variable will not be used.

If either of the dates is missing, age from the MONTHS variable will be used.

**Note:**

Please check the match of each variable carefully. EpiInfo/ENA suggests the matching variable, but this may not be a correct match in your dataset.

The screenshot shows a window titled "Select Survey" with a subtitle "If necessary please change the variable assignment". It contains two columns of variable assignments: "ENA for SMART" and "EPI Info".

ENA for SMART	EPI Info
SURVDATE	Survdate
CLUSTER	Cluster
TEAM	Team
ID	Id
SEX	Sex
BIRTHDAT	Birthdat
MONTHS	Months
WEIGHT	Weight
HEIGHT	Height
EDEMA	Edema

On the right side, there is a "Date format" section with three radio buttons:  ddmmyy,  mmddyy, and  yymmdd. At the bottom right, there is an "OK" button with a green checkmark icon.

#### 4. Selecting date format

In the window on the right select the date format which is used in your dataset. If the date format is selected incorrectly, the program will not be able to generate anthropometry scores. After the variables are matched and date format selected, click OK.

#### 5. New table with anthropometry scores, flags and categorical variables

The new table opens in EpiInfo Analysis window.

This data table contains all the variables from the survey data set, plus the following new variables:

**WAZ\_NCHS, HAZ\_NCHS, WHZ\_NCHS** – weight for age, height for age, and weight for height z scores based on NCHS growth reference

**WAZ\_WHO, HAZ\_WHO, WHZ\_WHO** – weight for age, height for age, and weight for height z scores based on WHO growth reference

**WAM\_NCHS, HAM\_NCHS, WHM\_NCHS** – weight for age, height for age, and weight for height % median scores based on NCHS growth reference

**WAZ\_NCHS\_c, HAZ\_NCHS\_c, WHZ\_NCHS\_c** – categorical variables (normal/moderate/severe) based on weight for age, height for age, and weight for height z scores based on NCHS growth reference (normal for  $\geq -2z$ -scores, moderate for  $\geq -3$  and  $< -2$  and severe for  $< -3$ )

**WAZ\_WHO\_c, HAZ\_WHO\_c, WHZ\_WHO\_c** – categorical variables (normal/moderate/severe) based on weight for age, height for age, and weight for height z scores based on WHO growth reference

**WHM\_NCHS\_c** -- categorical variable (normal/moderate/severe) based weight for height % median based on NCHS growth reference

**Note:** all children with edema (irrespective of their z scores or % median) are classified as severe for weight for height and weight for age, but not height for age

**Flag\_WAZ\_NCHS, Flag\_HAZ\_NCHS, Flag\_WHZ\_NCHS** – flags for weight for age, height for age, and weight for height z scores based on NCHS growth reference, flags are in yes/no format

**Flag\_WAZ\_WHO, Flag\_HAZ\_WHO, Flag\_WHZ\_WHO** – flags for weight for age, height for age, and weight for height z scores based on WHO growth reference, flags are in yes/no format

Note: flagged are records where the corresponding anthropometry score is either missing, or out of range as defined on the Options page of Settings (see defining the range for exclusion on the Options page described below). The default is no exclusion and therefore all values in these columns will not be flagged except those with missing data. If one of the flagging procedures is active the values which are outside the plausible range or missing are flagged with yes. The flag variable is very useful – flagged records can now be easily excluded from the statistical analysis in EpiInfo.

#### 6. Saving this table in Epiinfo format or in other format under a new name

You need to save this new data table under a new name, otherwise it will disappear after you close it. EpiInfo allows you to save this table in a variety of formats.

Click on **Write (Export)** command in **Data** section on the left panel.

**Write** dialogue box will open.

Make sure that **All (\*)** box in the upper left corner is checked.

In **Output Formats** window select format in which you want to save this data table.

In **File Name** line click on ... button on the right and browse to the folder in which you want to save your table. Type the name of the file, or select existing file. Click Save.

In **Data Table** window type the name of the survey data set you are saving.  
Click OK. Your data is now saved as a new file or a new table or spreadsheet in existing file.



# Automatic generation of the data quality report

## 1. Select survey button

Make sure your data table is 'active' on the main EpiInfo/ENA screen (the name of data table is showing on the central button). If it is not, select it as described in previous section

## 2. Plausibility check button

Click **Plausibility Check** button.

Select Survey window will appear where you need to match variables.

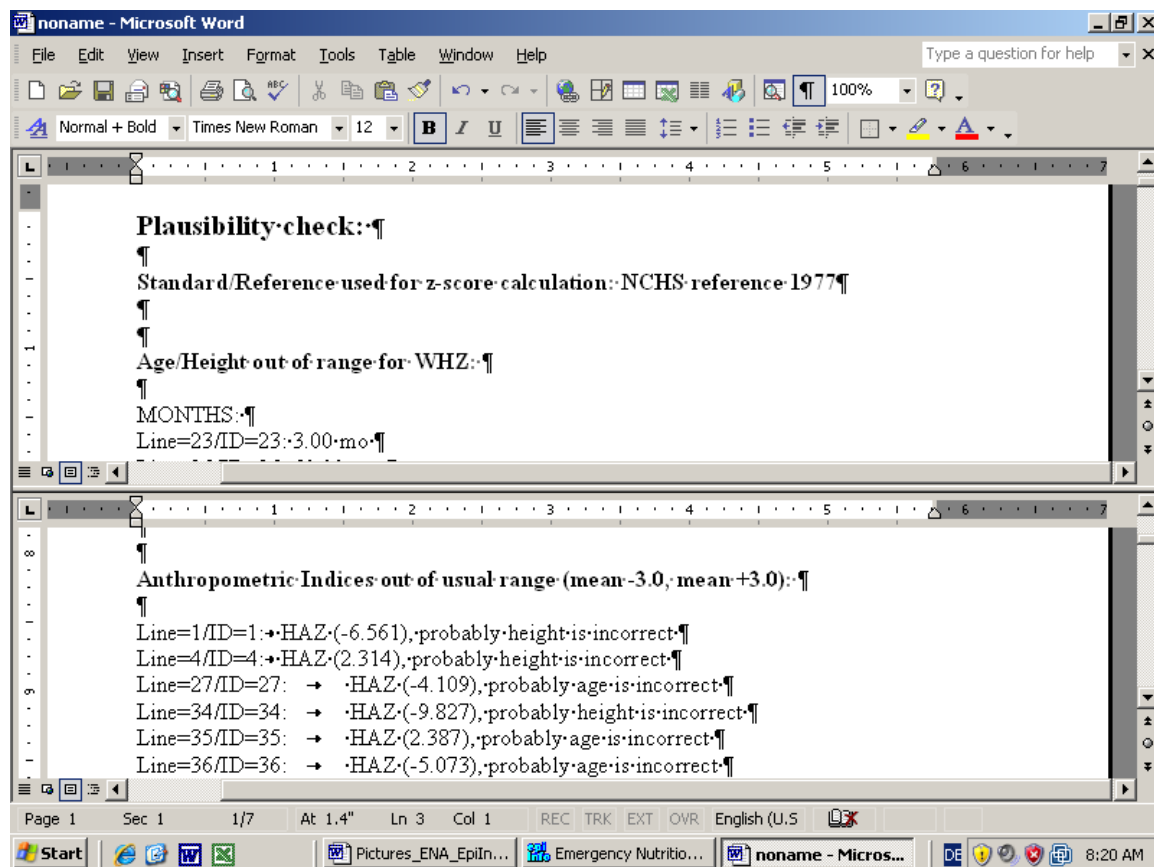
## 3. Matching variables screen

Match variables and select date format as described in previous section. Click OK.

Plausibility check report is now opened in MS Word format.

You need to save it under a new name, otherwise it will disappear after you close it.

**Refer to plausibility check instructions (a separate document) for detailed explanation of plausibility check outputs and interpretation**



# Automatic generation of the anthropometry graphs and survey report

## 1. Select Survey button

Make sure your data table is 'active' on the main EpiInfo/ENA screen (the name of data table is showing on the central button). If it is not, select it as described in previous section

## 2. Survey Results button

Click **Survey Report** button.

Select Survey window will appear where you need to match variables.

## 3. Matching variables screen and Results Anthropometry page, generating and copying anthropometry graphs

Match variables and select date format as described in previous section. Click OK.

Results Anthropometry page will open.

Here you can generate various graphs of anthropometric scores:

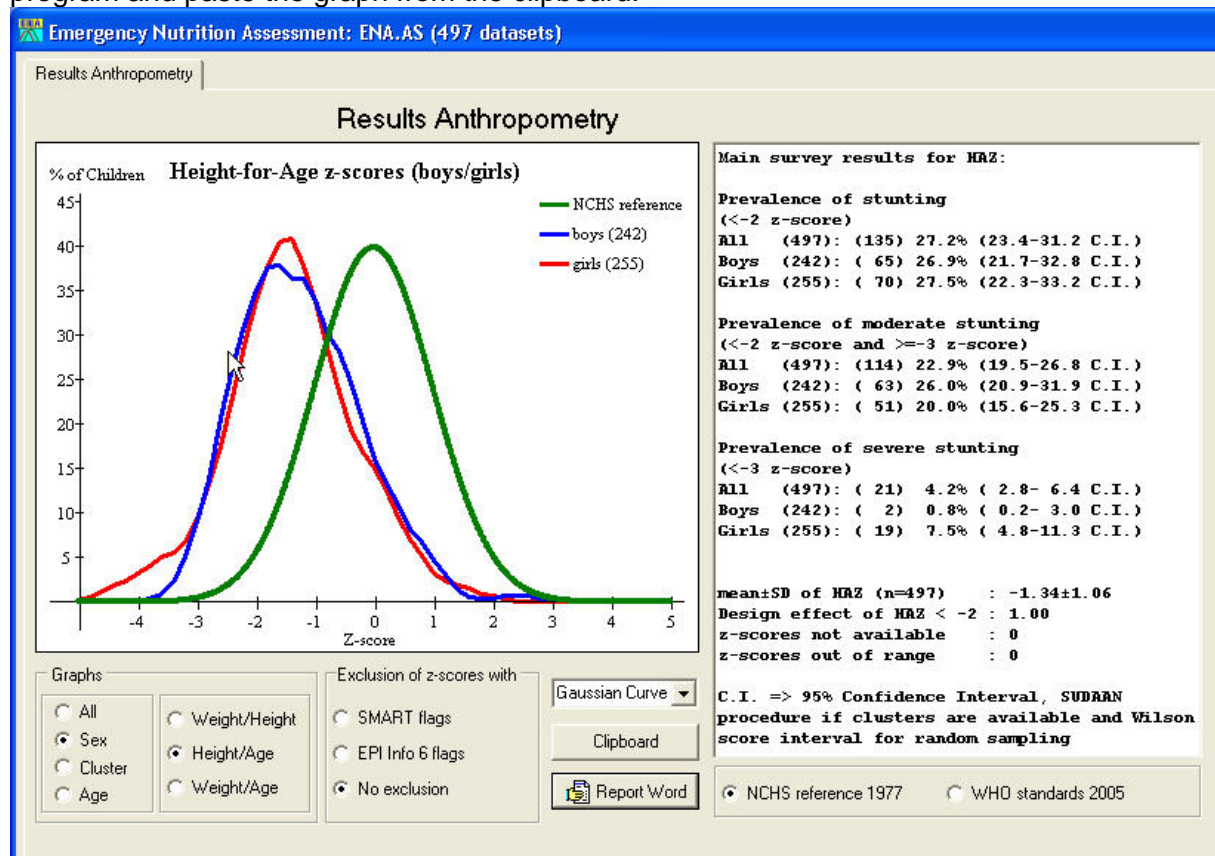
-- by age group, sex, cluster (first column of radio buttons from the left)

-- choose anthropometric indicator – W/H, H/A or W/A (second column of buttons from the left)

-- select criteria for exclusion of outliers (third column from the left): *SMART flags* mean exclusion from observed mean, *EPI Info 6 flags* mean exclusion from the reference mean (zero)

-- select the type of graph from the drop-down list

To copy the graph into the clipboard and then paste into your report, click on the **Clipboard** button. The current graph is copied into the clipboard. You can now go to your Word or other program and paste the graph from the clipboard.



## 4. Generating survey report

To generate survey report, click **Report Word** button.

Survey report template is now opened in MS Word format.

You need to save it under a new name, otherwise it will disappear after you close it.

Note: Some tables in survey report template are populated with calculated survey results. Survey results based on NCHS growth reference are in the main body of the report, survey results based on WHO growth reference are in the appendix.

The screenshot shows two overlapping windows of Microsoft Word. The top window displays a survey report template with the following content:

**Report of Nutrition and Mortality in (region, camp etc) of (country) during (date to date)**

**Summary of the report (one to two pages only)**

- area surveyed
- date of survey
- methodology employed
- main anthropometric results (prevalence of global and severe acute malnutrition in terms of z-scores and/or oedema and 95 per cent confidence intervals)  
GAM: 30.1% (24.1-36.9 95% C.I.)  
SAM: 11.4% (7.3-17.4 95% C.I.)

The bottom window shows a table titled "Table 3.2: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex".

	All n=342	Boys n=188	Girls n=154
Prevalence of global malnutrition (<-2z-score and/or oedema)	(103) 30.1% (24.1-36.9 95% C.I.)	(54) 28.7% (21.7-36.9 95% C.I.)	(49) 31.8% (24.1-40.6 95% C.I.)
Prevalence of moderate malnutrition (<-2z-score and >=-3z-score, no oedema)	(64) 18.7% (15.5-22.5 95% C.I.)	(31) 16.5% (12.4-21.6 95% C.I.)	(33) 21.4% (15.9-28.2 95% C.I.)

## Settings of the program

Age groupes (months)		Expected proportion of children	
		male	female
6	– 17	1000	1000
18	– 29	975	975
30	– 41	945	945
42	– 53	930	930
54	– 59	920	920

Analyzing children only for  
6.00 to 59.99 months

Exclusion of z-scores from

Observed mean  
SMART flags  
WHZ -3 to 3  
HAZ -3 to 3  
WAZ -3 to 3

Zero (reference mean)  
EPI Info 6 flags  
WHZ -5 to 5  
HAZ -6 to 6  
WAZ -6 to 5

No exclusion

Reset  
Save

In this part of the program the settings for the flags generation, plausibility and survey report can be changed.

**The first section on the right** is to define the age range of children for inclusion in the automated analysis. Children that are outside the defined age range (default is 6-59.99 months) will be automatically excluded from the survey report analysis.

**The second section** (age groups) is relevant for parts of the plausibility and survey report. It determines the age groups which will be used for data analysis. Here you can also change assumptions about the proportion of males to females and of different age groups. This is relevant mostly for plausibility check.

**The third section** (exclusion of implausible z-scores) has three options available:

- One uses a range from zero (mean of the reference). Cutoff values currently recommended by WHO are used as defaults for this option
- Second uses a range which is defined from the observed mean of the population. A value of  $\pm 3$  is used as a default for this option.
- No exclusion – no values excluded no matter how implausible they are

**Note:** Values more extreme than the ones defined in this section will be excluded from automated analysis in Survey report. They also will be flagged (along with the missing values) when Anthropometry Scores are generated.

# Survey planning and sample size calculation

Emergency Nutrition Assessment: ENA\_TEMPLATE.A5 (0 datasets)

Planning Training Options

## Planning Nutrition Survey

**Name of Survey**

**Sampling**  
 Random  
 Cluster

**Sample size calculation for a cross sectional anthropometric survey**

Estimated prevalence %     Average household size  
 ± desired precision %     % children under 5  
 Design effect     % of non-response households  
 Children to be included     Households to be included

**Sample size calculation for a mortality rate survey**

Estimated mortality rate per 10000/day  
 ± desired precision per 10000/day  
 Design effect     Average household size  
 Recall period in days     % of non-response households  
 Population to be included     Households to be included

**Table for Cluster sampling**

Number of Cluster    Assign Cluster

Geographical unit	Population size
A	100
B	2000
C	3000
D	1000
E	100
F	500
G	200
H	100

**Random Number Table**

Range from  to  Numbers     Generate Table

Windows taskbar: Start | Emergency Nutritio... | ENA for SMART | 8:24 AM

# Training anthropometry exercise in EpiInfo/ENA

Emergency Nutrition Assessment: ENA\_TEMPLATE.A5 (0 datasets)

Planning Training Options

## Evaluation of Enumerators

Please enter for the supervisor and all enumerators the training measurements (10 children measured twice for weight and height)  
After entering the data press the report button to get an evaluation for each enumerator.

Subjects	Supervisor				Enumerator 1				Enumerator 2			
	Weight 1	Weight 2	Height 1	Height 2	Weight 1	Weight 2	Height 1	Height 2	Weight 1	Weight 2	Height	
1	12.3	12.2	82.8	82.2	12.3	12.2	81.9	82.6			84.1	
2	11.2	11.3	83.8	84.6	11.3	11.2	84.6	84.6			84.2	
3	8.4	8.5	86	85.6	8.5	8.3	86.3	86.1			85.6	
4	4.7	4.4	86.2	86	4.6	4.4	86.2	85			86.6	
5	13.2	13.2	82	82	13.1	13.2	82.5	82.3			82.7	
6	15	15.1	85.6	85.4	15.1	15.3	85.7	86.2			85.5	
7	16	15.9	82.3	82.4	16	16.1	82.4	82.5			82.6	
8	17	16.9	87.6	87.6	16.9	17.1	88	87.5			87.7	
9	18.3	18.4	80.1	80.6	18.2	18.2	81	80.4			81.1	
10	12.4	12.5	85.3	86.5	12.5	12.6	85.8	85.2			85.9	

Report

Start | Pictures\_ENA\_EpiIn... | Emergency Nutritio... | ENA for SMART | 8:25 AM