2025 Kenya – Mini Demographic and Health Survey (KMDHS)

Computer Assisted Personal Interviewing (CAPI) Manual

2025 KMDHS
Computer Assisted Personal Interviewing (CAPI) Manual

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INTRODUCTION

This document will introduce the major operations of the computer assisted personal interviews (CAPI) in the KDHS. This section explains the role and responsibilities of interviewers conducting the KDHS survey using tablet or laptop computers.

Because computer-aided interviewing techniques are likely to be new for interviewers, it is particularly important to understand how to ask questions and deal with problems arising in interviews and fieldwork using this new technology. In particular this document will explain how to record responses correctly and follow instructions given by the computer.

1. USING THE TABLET

1.1 What is a Tablet?

Tablets are ultra-portable computers which can run a variety of software programs. For this survey, we use a system of programs developed using CSPro, which is a data entry and management software designed for surveys and censuses.

The types of tablets used for this survey are designed so that gentle pressure on the tablet screen will not have any effect. Therefore, it is necessary to apply moderately firm pressure on the screen in order for your finger to be detected. Also, it is important not to press on the screen too long, since this will be treated by the tablet as a different command from that of a "click". Normally, a single tap on the screen will be treated as the equivalent of a "left click" using a mouse, whereas to hold on the screen for more than a few seconds will be treated as a though it were a "right click" command using a mouse.

1.2 Powering up and powering down the Tablet

1.2.1 Procedure for powering up ("booting") the tablet

Follow the steps below to boot up the tablet and enter the password.

1. Press on the Power button at the top right hand side of the screen, to power up the tablet.
2. Slide up on the tablet to type in the password.
3. Type in the password that was given to you. If you have forgotten the password, please contact IT to get it.
4. If your password is correctly entered, the tablet screen will appear after a short delay.
5. If you see an error message, click on the password field and re-enter your password, making sure that you enter it carefully. Then repeat step 5.

1.2.2 Procedure for shutting down or hibernating the tablet

To shut down the tablet, the first step is to quit the KDHS menu using the "Exit" option in the interviewer's menu. Then, hold down the power button on the right and then click "Power off".

To put the tablet to sleep, which means that when you turn it back on all the programs will be there when you turn it back on, you will need to press the button the right.

- To conserve battery power, it is recommended that the "Sleep" mode be used to shut down the tablet if it is likely to be restarted within two hours (for example, during the day when carrying out interviews).
- If the tablet will not be used in the next two hours it is better to use the "Shut down" option.

1.3 Managing Batteries and Power with your Tablet

To charge the battery in the tablet, connect the AC adaptor power cable.

You can see how much battery power is left by looking at the percentage in the top right hand corner over the battery icon. When it is charging, you will see a lightning bolt in the battery icon.

Please charge your tablet every night. If your tablet dies during an interview, the data will be lost.

1.4 Troubleshooting: The Tablet does not Respond to Commands

Sometimes when using the tablet, it becomes « stuck » and cannot respond to any commands or clicks.

To resolve this problem: Press continuously on the power button until the screen goes dark to shut down the tablet forcibly.

2. KDHS CAPI INTERVIEWER MENU SYSTEM

Glossary of terms

CAPI (computer assisted personal interviews). a system on a tablet or computer that an interviewer uses to conduct an interview

CSPro. (Census Bureau and Survey Processing) system is the software that is used for all data collection and data processing procedures for the KDHS.

Application, program, system. These refer to CSPro programs, other utilities and general functionality provided for CAPI use.

Supervisors, Interviewers, users. Users refer to fieldwork personnel involved in the data collection operation. Sometimes this document explicitly refers to supervisors or interviewers but in some other sections, the generic term "users" is used.

Questions, fields, variables. These terms refer to questions in the questionnaire or to areas on the tablet screen where data is recorded.

Rosters, multiple records. These correspond to sections in the questionnaire that repeat. For example, the household schedule has a line for every household member and the woman's Pregnancy History has a line for every child the woman had given birth to in the past five years.

Enter any key to continue. In some specific fields the system prompts the user to: "Enter any key to continue." Pressing any key works correctly, however it is recommended to use the arrow key because those keys leave the field with a blank character.

KMDHS. This is the name of the survey.

Add/Modify mode. These keywords refer to how CSPro interprets the data collection process. The first time that data is being entered, CSPro is in add mode. When returning to a questionnaire that was either partially saved or already completed, CSPro is in modify mode. It is important to know about these modes because the CAPI system may not display some messages while in modify mode.

2.1 Introduction to CAPI Elements

The KDHS uses Census and Survey Processing (CSPro) software for their CAPI surveys. CSPro was developed by a partnership between the US Census Bureau and ICF International.

There are three files or databases that are required for a MDHS CAPIs system. These files are the backbone of the CAPI system as they allow users (interviewers and supervisors) to register into the system, to control the execution of the sample selection and to make sure that geographical variables related to the survey are correctly assigned to the questionnaires. The files need to be prepared well in advance before the data collection operation begins and they are: The clusters, the fieldwork personnel and the households selected for a cluster.

2.1.1 The Clusters file

This file contains one entry for every cluster included in the sample. It defines all geographical variables related to the cluster. There may be instances where special studies are carried out in selected clusters, so this file may have marks to that effect. The file may also contain the number of households in a cluster based on census data. This information can be used for household listing purposes particularly if that operation is also carried out as part of the CAPI operation.

2.1.2 Households selected for a cluster file

This file is used to register in every cluster all households that need to be visited in the cluster.

For every household selected in a cluster, the file contains: The household address; the name of the head of the household and all subsampling required at the household level. It is with this file that the KMDHS CAPI system controls the proper execution of the sample.

2.1.3 The Fieldwork personnel file

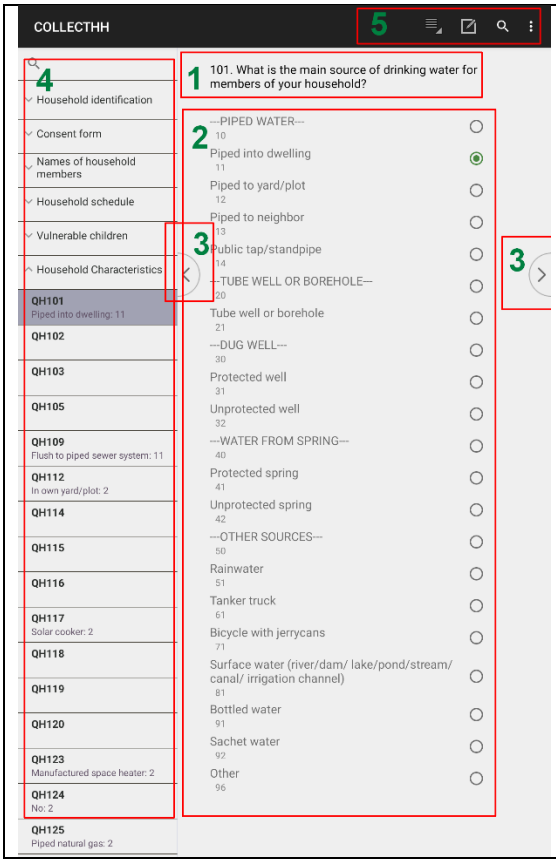
In this file, all fieldwork personnel, supervisors and interviewers participating in the survey are registered. Information that is included for each person is: their name, gender, role on the team, team number, and their assigned interviewer/supervisor code. The team number is important because only certain actions, such as sharing household interviews, can happen between team members. The gender also is important because it is used to determine if an interviewer is allowed to interview an individual. It is KMDHS policy that only female interviewers can interview women for individual interviews. However, the household interview can be conducted by either a male or female interviewer. If anyone switches teams or becomes a supervisor, this file will be updated by the ICF data processor and sent to the team via CSWeb.

2.2 KMDHS CAPI system overview

2.2.1 Introduction

The CSPro CAPI system automatically controls valid values (ranges) that a question can have. It also automatically controls the skip patterns that are in the paper version of the questionnaire and checks consistency among questions as the interview progresses. The data is collected in sections which are groups of questions corresponding to a topic in the questionnaire.

When in an interview, the entry program window for the household questionnaire has five main components as shown in the table below.



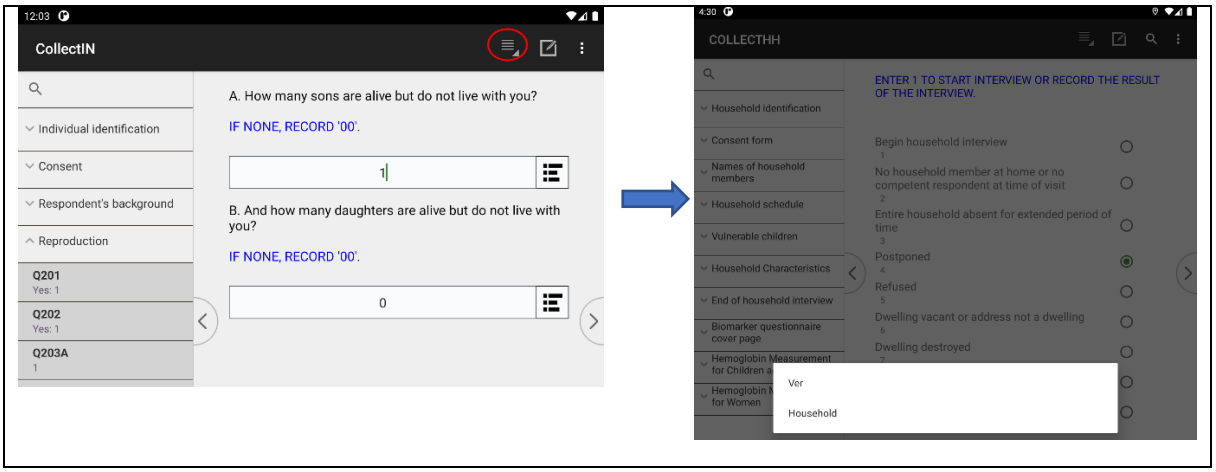
Components of CAPI Window	
1	Question text area
2	Response categories for the question
3	Forward and back navigation buttons
4	Questionnaire navigation bar
5	CAPI system buttons

The elements in the form as shown above are:

[2.2.1](#) **Question Text area**

This part of the screen contains the text of the question. It is essential that you carefully read the question text to the respondent exactly as it is written on the screen.

2.2.1 CAPI toolbar button

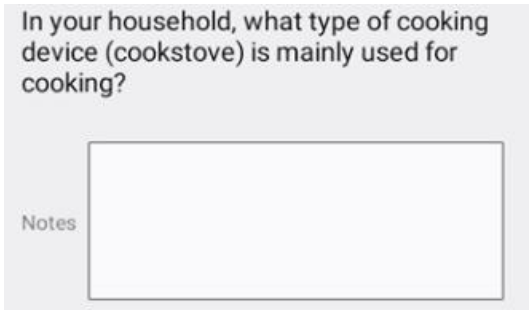


The **CAPI Toolbar button** is found at the top right-hand side of the CSPro window as shown above. This button is used to access menu options that display information and perform certain tasks. The menu options displayed by the button are different depending on the type of questionnaire being entered and the section being entered. The table below summarizes the functions that can be accessed by the toolbar button depending on the questionnaire type and section.

CAPI Toolbar button options

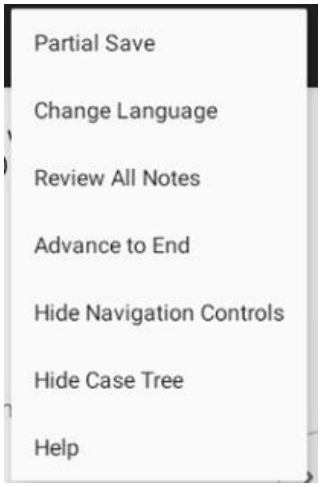
Title	Description	Questionnaire Type		
		HH	W	M
Ver	Shows the version number of the CAPI system. Is used to check that the interviewer has the latest version of the system after a system update.	✓	✓	✓
Household	Shows a list of household members with their relationship, sex and age	✓	✓	✓
Section	Shows a list of all the sections of the woman and man questionnaire. Clicking on a section will allow navigation to that section, if data has been entered up to that section.		✓	✓
Pregnancies	Displays a list of options to add, insert, delete and move entries in this section, and also an option to display a summary of pregnancy outcomes entered in the table. This option is only shown in the pregnancy history table section for the woman's questionnaire.		✓	
Foods and drinks	Displays food and drinks categories. This option is only shown in section 6 of the woman's questionnaire.		✓	

 The note button. If you need to make a note about a question, click on this and then type in your note.



 The search icon. On a question, you can filter the response listing.

 The button has a variety of options (see below) which will be explained throughout the manual



2.2.2 Navigation buttons

These buttons are used to navigate within questionnaire fields.

 By pressing this button, the cursor moves one field back. The button is also known as the "Back button".



By pressing this button, the cursor moves one field forward. The button is also known as the "Advance button". It is important to note that you won't be able to move forward unless the question has a response entered or is already present in the field.

2.2.3 Navigation bar

The navigation bar is found at the left-hand side of the screen during data entry. It provides an outline of the sections of the questionnaire and is a very useful tool for navigating the questionnaire.

The navigation bar can be used in two ways:

1. To view responses to questions elsewhere in the questionnaire without needing to leave the current question. This can be particularly useful in a roster to see the responses for other children or household members, for example.
2. To move around the questionnaire quickly. To move from the current question to another question, just click on the entry for the question you wish to move to in the navigation bar. Note that the response to that question must have already been entered for you to be able to move there.

The navigation bar uses different shades of grey and white to show questions have been entered, which are protected, the current question, and questions not yet entered. The various colors are used, and their meanings are shown in the table below. In the example below, Q440 is the current question, questions Q434-5 and Q438/9 have already been entered, Q436/7 are protected fields and Q441/2 have yet to be entered.

Example	Color	Description
	1. Light Grey	Fields for questions that have already been entered by the interviewer.
	2. Dark Grey	Protected fields
	3. Medium grey	Question currently being entered
	4. White	Questions that have not yet been entered in the interview

The navigation bar shows the contents of the questionnaire in a tree structure as follows:

Section
- ---- Questions
- ---- Roster (repeated groups of questions)
  - ----Questions within a roster

Sections can contain both single questions that are not repeated, and groups of repeated questions, known as "rosters". For example, the Household characteristics section consists of single questions QH101-QH126. An example of a roster is found in the household schedule section with questions QH01 – QH15 being repeated for each household member. Some sections can contain both single questions and one or more rosters. An example is the pregnancy history section, which contains two rosters with an entry for each pregnancy outcome, the introductory roster (Q215L-Q222) followed by the continuation roster (Q223-Q227). This section also contains two single questions that are not part of either roster, Q222A and a question named "Confirm". Rosters can have one or more occurrences. In most cases, each occurrence will be given a label to assist navigation through the system. Examples of rosters and labels are given in the table below.

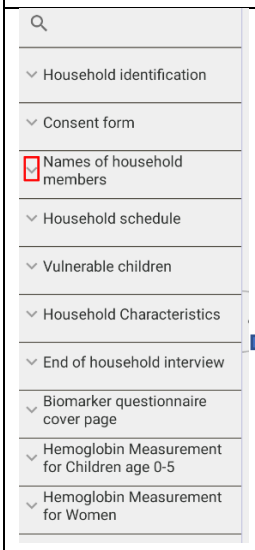
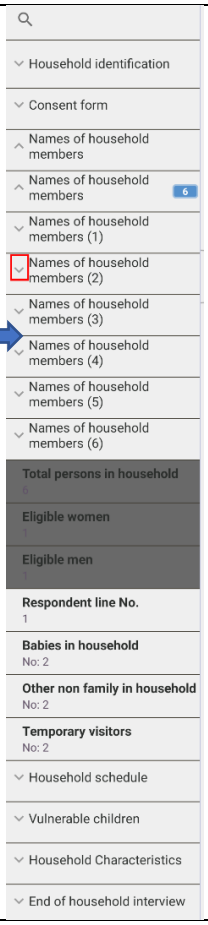
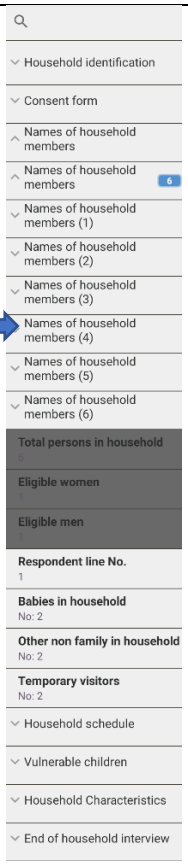
Rosters in the KMDHS Questionnaire

Questionnaire	Title of roster in navigation bar	Questions in roster	Occurrence Label
Household	Names of household members	QHFIRSTN-QHMORE	Member name
	Household schedule	QH01-QH15C	Member name
Woman	Pregnancy history introductory roster	Q215L-Q222	Child name/outcome type
	Pregnancy history continuation roster	Q223-q228	Child name/outcome type
	Contraceptive table	Q301	Contraceptive method
	Pregnancy and postnatal care	Q404-Q486	Child name

Section blocks in the navigation bar can be expanded to show all rosters and questions that they contain, by clicking on the "∨" symbol to the left of the section title. Conversely, a section can be collapsed by clicking on the "∧" symbol to the left of the section title.

The display of rosters in the navigation also behaves in a similar way, so roster entries can be collapsed and expanded to show the occurrences inside rosters with their labels. Finally, an occurrence within a roster can be expanded to show the list of questions for that occurrence. The table below shows examples of how to expand and collapse a section and a roster within that section.

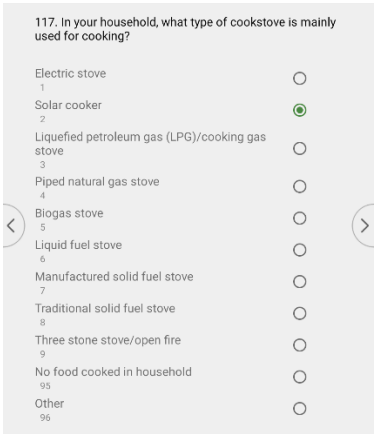
Example of expanding section and roster entries in the navigation bar

Click on the section title to expand it.	Click on roster title to expand to occurrences	Click on occurrence number 2 to expand it and show the questions for that occurrence	Click on the ^ symbol to collapse the occurrence once again	
				

2.2.3 Types of questions and responses

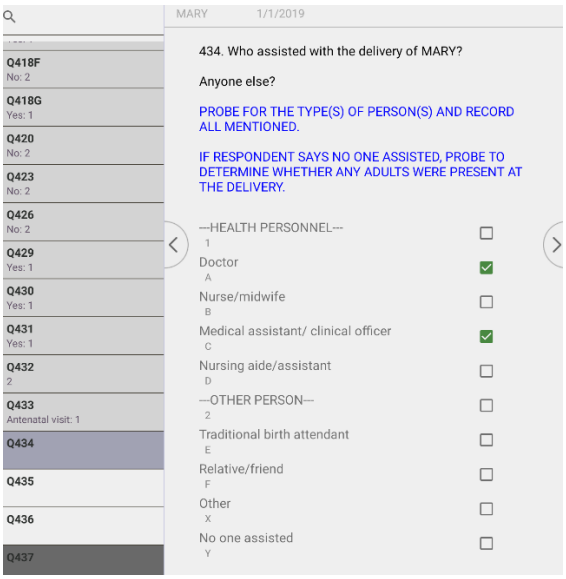
2.2.3.1 Radio Buttons

This type of field is used when a question has a set of predefined responses to a question. Users can only select one of the responses displayed. The selected response is marked by tapping on the circle next to the response. Note that if a response is already marked and you select another answer, the previous response is de-selected. This is the most common type of response category in the KMDHS.



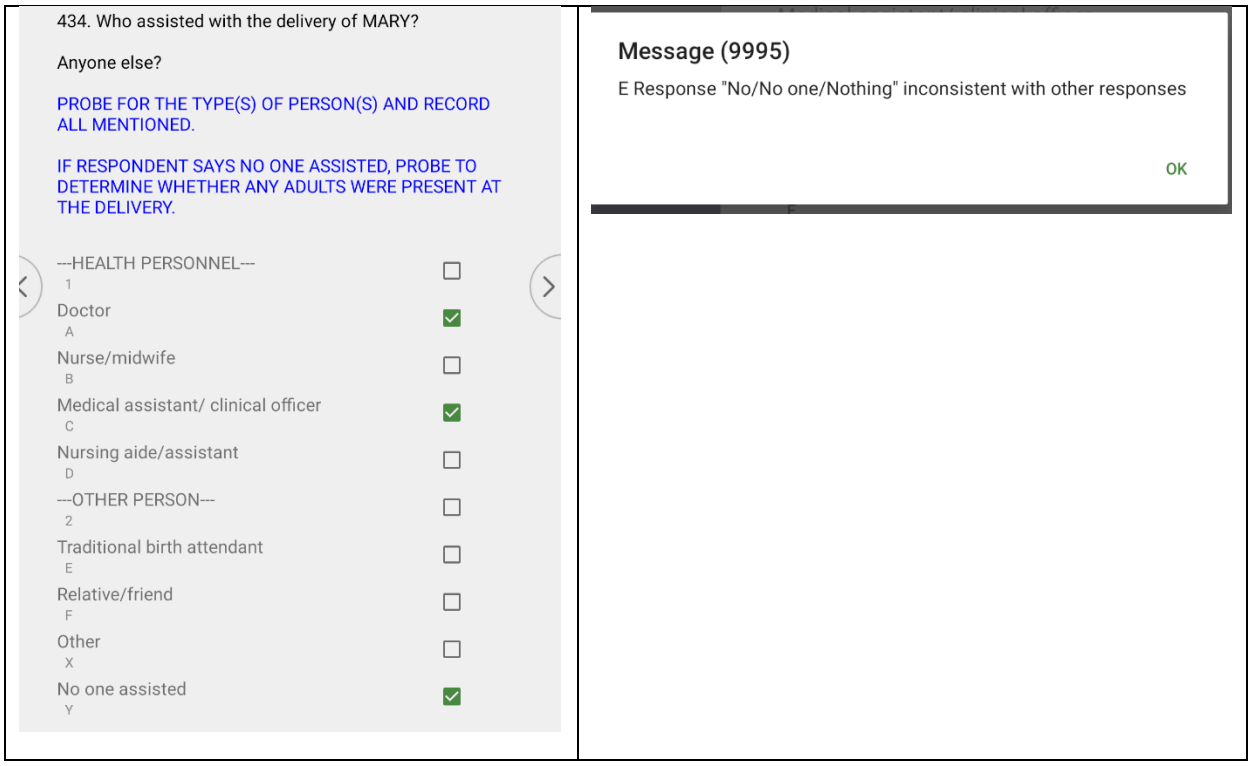
2.2.3.2 Check Boxes

This control is used when there are multiple predefined responses to a question, and users can select one or more options. To select an option, just click on the box next to the option. To unselect an option, users should click on the checked box. For some questions there may be more responses than can fit on the screen, so remember to scroll down to see all possible responses.



Note that for these types of questions, certain responses cannot be combined with others. Common examples of such responses are: “Don’t know”, “None”, “Nothing”, or “No-one”. These types of responses are termed “No” codes.

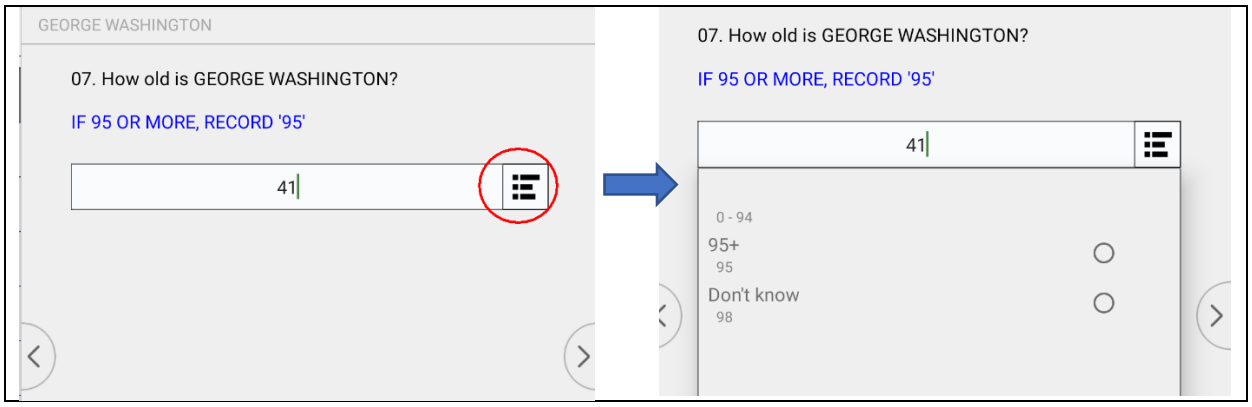
If a "No code" is entered in combination with another code in a multiple response question the CAPI system will generate an error message 9995 "No/No one/Nothing" inconsistent with other responses, as shown in the example for Q434 below. In such cases you should click "Ok" on the message and then review the responses and correct them. The CAPI system will not allow the interview to proceed until the inconsistency is corrected.



2.2.3.3 Combo box: Open ended questions

This type of field is used when the number of possible values for a question is too many to be displayed as a radio button, for example, questions which require numeric responses such as age, number of months or days, number of injections. Rather than displaying one line for each possible value, the combo box field displays a range of valid values for the question. Sometimes there are special response categories for a question of this type, such as "Don't know, which will also be displayed by the combo box.

In the example below, question 7 in the household questionnaire asks the age in completed years for each household member. The CAPI system presents a box for entering the response and an icon with three lines to the right of the box. Clicking on the icon will show the possible ranges for the numeric response for this question, and any special response categories defined for the question. In this example, clicking on the icon shows that ages 0-94 years can be entered, and that there are two special response categories for this question: "95+": all responses 95 or higher, and "98": don't know. The special responses may be entered either by clicking in the circle next to the box or by entering the numeric value shown for the special response.



2.2.3.4 Text Boxes

This is the simplest of the CSPro controls and it is used to enter plain text. In the MDHS, this is used in to enter household names, addresses, names into the Pregnancy History, and the textual response to questions where the "Other" category requests to specify an answer.



2.2.3.5 Questions with repeating sub-items

These types of questions are used where the same question is asked for multiple different items. An example is Q418 in the women's questionnaire asking about which actions a health care provider took during an antenatal visit. There is a "main" part to the question "*As part of your antenatal care during this pregnancy, did a healthcare provider do any of the following at least once*", followed by a series of questions about different actions such as measuring blood pressure, taking a urine sample and so on. Each question has a separate response which must be completed.

For these types of questions, all responses for the different sub-items are collected on the same screen. Note that you may have to scroll down the screen if there are many separate responses.

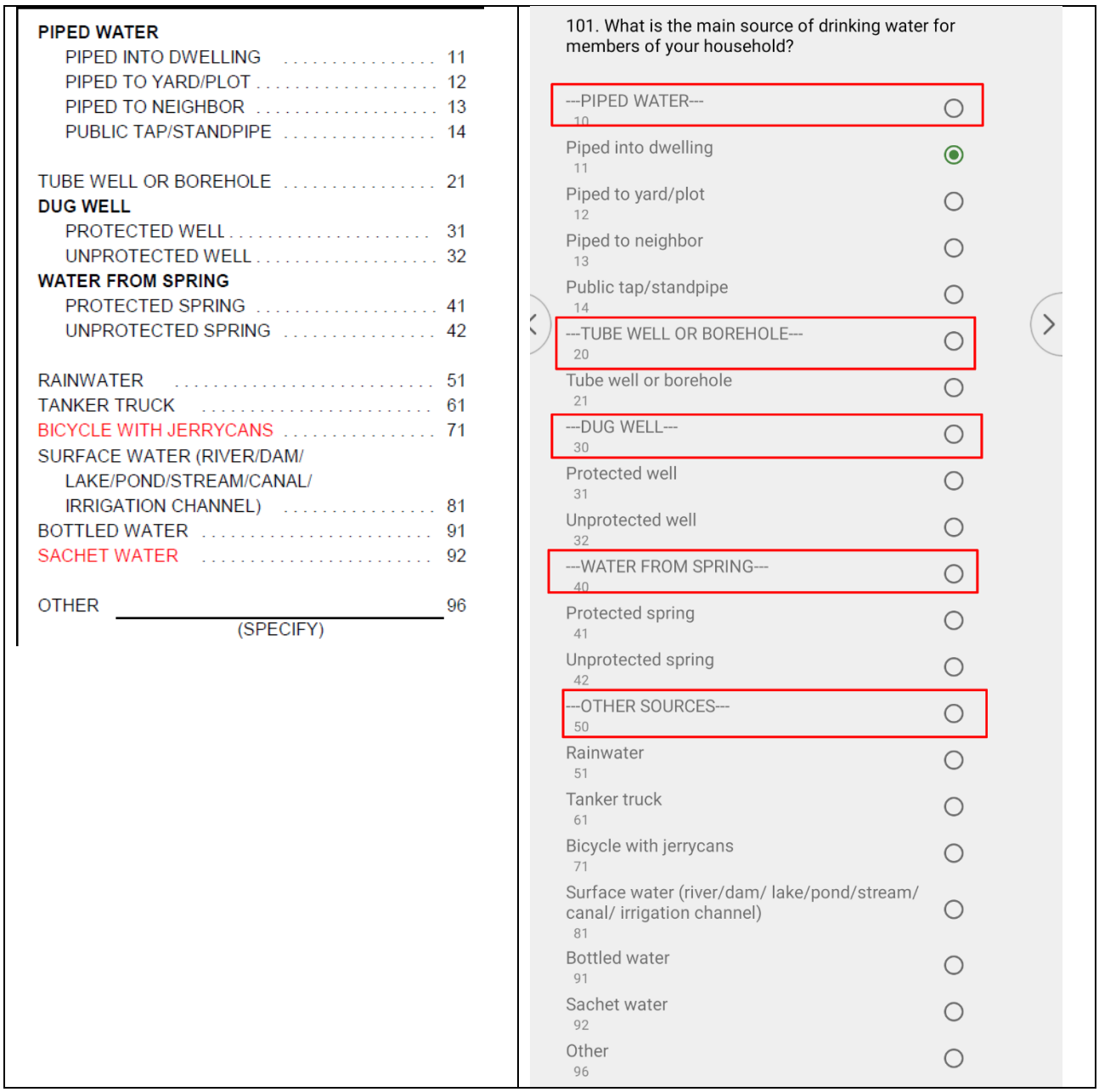
You will need to complete responses for each sub-item on the screen before you can move to the next question. Once all items are complete, you can move forward by clicking on the advance (right) arrow.



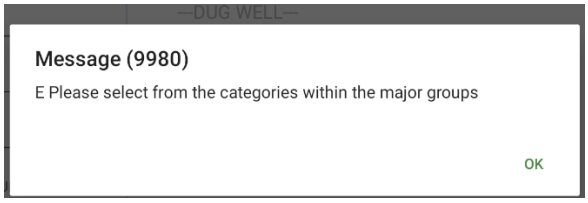
2.2.3.6 Questions with Major group headings

Some questions in the KMDHS have responses that are divided into related groups with group headings. The purpose of the group headings is to make it easier to find the correct response for a given question, especially if there are many possible responses. Group headings are **not** valid responses in themselves and should **not be selected as a response to a question by the interviewer**.

An example is shown below for QH101, Main source of drinking water. The major group headings are always shown in the CAPI system in upper case letters while the response categories are shown in sentence case.

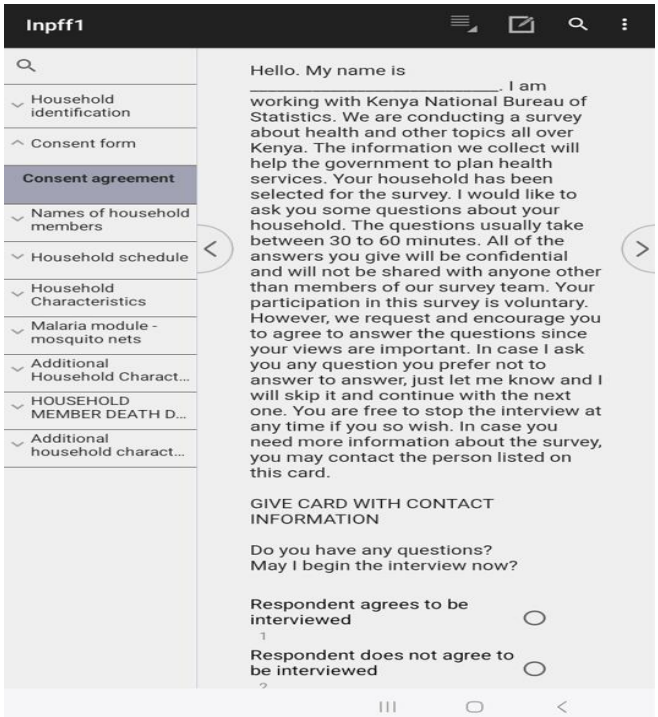


Although group headings are not valid responses to a question, because of the design of the CAPI system, the headings still have radio buttons or check boxes next to them. If the interviewer checks a group heading, the system will generate an error message as shown below. To resolve the message, uncheck the box next to the group heading, and, if necessary, select the correct response from one of the items underneath the group heading.



2.2.8 Protected fields

Protected fields are fields that are automatically filled by the CAPI system in the example below, you can see that some fields are dark grey (meaning they have data), but it is automatically filled in. The time and date were taken from the tablet's time and date. Information related to geographical variables like region, household location (Large/small city) and household address was obtained from the cluster database. Cluster, household number, interviewer and supervisor numbers are filled based on the information entered in the CAPI interviewer's system. Protected fields are provided to assist the interviewer by showing useful information, but they cannot be changed.



2.2.8.2 Error Messages

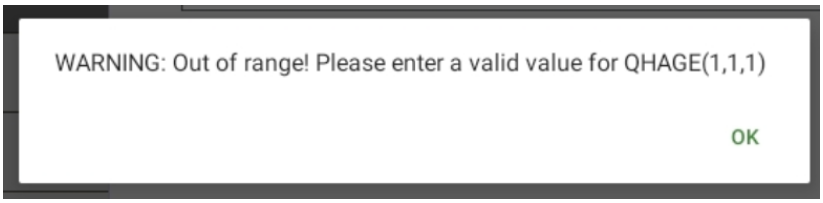
The KMDHS CAPI system also includes several data validations and consistency checks among questions.
Data validation is done by the CAPI system on the responses for each question to ensure that they are within the ranges expected for a given question.

Several checks are done automatically by the CAPI system to check consistency between key items of information provided by the respondent, as the interviewer moves through the interview. For example, date of birth of the respondent will be checked against her age to ensure they are consistent. If the checks reveal inconsistencies, the CAPI system will display a message indicating the problem and providing some information to help resolve it. The different types of checks are described below.

2.2.4.1 Out of range entry

When a value is entered in a field, CSPro automatically checks the response to make sure it is within the defined values for each question.

If a value that is out of range is entered for a given question, CSPro will display the message below. To dismiss the window message, click on the OK button. After clicking OK the system takes you back to the question. Check the value entered and re-enter a valid value for that question. In most cases, these messages are generated by the interviewer entering an incorrect value for the question due to an entry error.

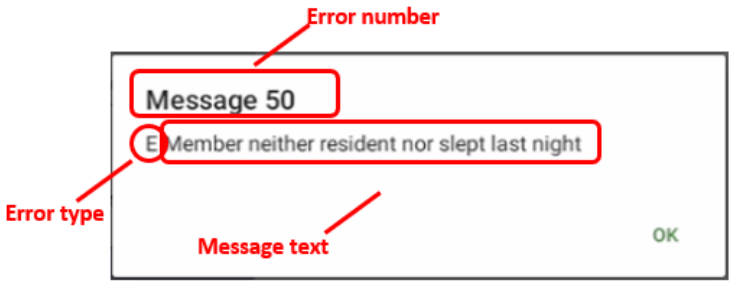


2.2.4.2 "Hard checks": Inconsistencies that must be corrected by the interviewer

For some inconsistencies the system will require that the interviewer correct the issue before they can continue with the interview. These kinds of checks are usually those that involve key items of information such as a respondent's age, or which can be easily corrected by the interviewer.

These types of checks are indicated by the letter "E" (for Error) preceding the message.

For example, for an individual to be considered as a household member according to the MDHS survey rules, he or she must be a usual resident or have spent the night before in the household. In the example below, the member being entered was neither a usual resident nor someone who spent the night before in the household.

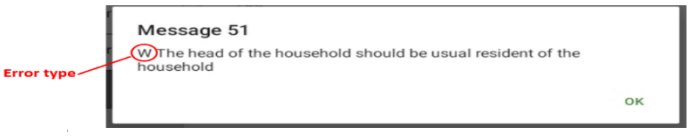


The message window itself has three elements. The "Message number" is a number given by the CAPI developer. When asking questions about errors displayed by the CAPI system, users should refer to this number as it helps the developer to identify where the problem is located. The "Error type" identifies the severity of the error. Errors that begin with the letter "E" indicate that they are serious errors that need to be resolved before the program can proceed to the next question. The "Message text" is a textual description of the problem. Users should read the text, use that information to identify the cause of the problem and provide a solution. Once the text is analyzed, users should press the OK button. In these types of errors, the cursor will stay in the field that originated the error until the problem is resolved.

2.2.4.3 "Soft checks": Warning Errors

For some inconsistencies, the system will not require the interviewer to correct the issue before moving forward. However, interviewers should still be sure to read and understand the message and attempt to resolve it before continuing with the interview.

These types of checks are indicated by the letter "W" (for Warning) preceding the message.



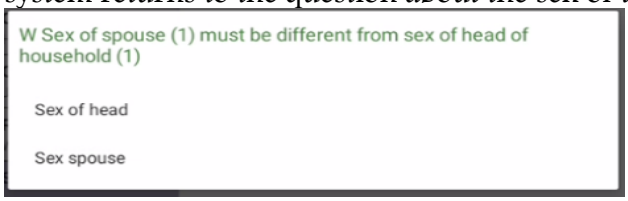
The example shown above indicates that the head of household should be a usual resident of the household. This message refers to QH05 in the household questionniare, "does (NAME) usually live here". In most cases the expectation in the MDHS is that the head of the household is a usual resident of that household, however, in some rare cases it can be possible for the person considered head of household for the purposes of the interview to not be a usual resident. In this case the interviewer should double check that the response to QH05 was correctly given and correctly entered by them. If it is found that the response is really that given by the respondent the interviewer may continue. Alternatively, if the interviewer finds that the response was not correctly recorded they should correct the entry.

2.2.4.4 Messages with links to responses

This type of message is intended to make it easier for the interviewer to correct an inconsistency. The message provides links that allow the interviewer to navigate directly to responses that are identified by the check as being inconsistent, so that they can be checked and, if necessary, corrected.

Message displaying links to responses may be either Error or Warning messages. When the message is of a warning type, the button "Continue" will be displayed as one of the links. When the
"Continue" link is selected, the CAPI system will continue with the interview without requiring the message to be resolved.

The message below is displayed when entering the person's relation to the head of household. In this case, the head of household is a man, and the second resident is the spouse of the head of household. The interviewer put the second resident's sex as male and notes that he is the spouse of the head of household. Traditionally, men are married to women and therefore the system is allowing the interviewer to fix the mistake. The interviewer either can change the sex of the head of the household or the sex of the spouse. By pressing the "Sex of head" button, the system returns to the question about the sex of the head of household and by pressing "Sex spouse," the system returns to the question about the sex of the spouse.



3. GENERAL INSTRUCTIONS FOR CARRYING OUT INTERVIEWS USING THE TABLET

3.1 How to Ask Questions and Record Responses

It is very important that interviewers ask each question exactly as it is written in the question text displayed on the screen. When asking a question, speak slowly and clearly so that the respondent will have no difficulty hearing or understanding the question. Make sure that you are looking at the respondent whenever you are asking a question.

It is recommended that you hold the TABLET in front of you so that you can read the question and look at the respondent at the same time. If you place the TABLET on your lap or on a table, ensure that you do not keep your head down when you read a question. Eye contact with the respondent is critical to developing a good rapport with the respondent.

At times you may need to repeat the question to be sure the respondent understands it. In those cases, do not change the wording of the question but repeat it exactly as it is written.

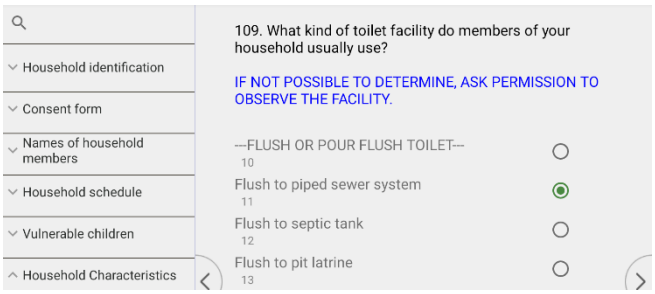
If, after you have repeated a question, the respondent still does not understand it, you may have to restate the question. Be very careful when you change the wording and that you do not alter the meaning of the original question.

In some cases, you may have to ask additional questions to obtain a complete answer from a respondent (we call this 'probing'). If you do this, you must be careful that your probes are "neutral" and that they do not suggest an answer to the respondent. Probing requires both tact and skill, and it will be one of the most challenging aspects of your work as a KMDHS interviewer.

3.1.1 Following Instructions

Throughout the KMDHS questionnaire, instructions for the interviewer are displayed in all CAPITAL LETTERS and are presented in **blue** on the screen, whereas questions to be asked of the respondent are printed in small letters and are in black on the screen.

Skip and filter instructions in the printed questionnaire are executed automatically by the program in the tablet; however, the interviewer should pay close attention to ensure that the program is going to the correct question, that it makes sense to ask the question and that the interviewer has not inadvertently clicked on the wrong code or value.



In addition, there are instructions for the interviewer that he/she should follow carefully to ensure that all questions are recorded correctly.

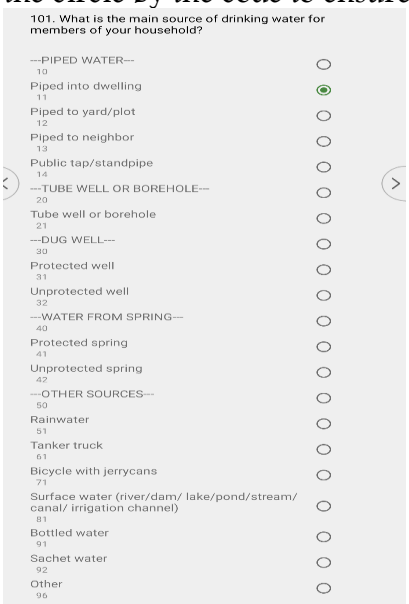
Text in green means that the beginning of the question repeats, and then the text in black is the specific question. For example, you will see this when you are asking what items a household owns.

3.2 Recording Responses

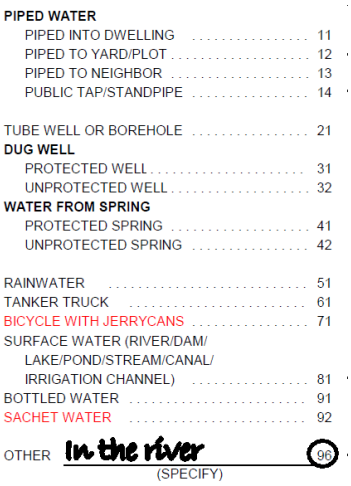
There are several types of questions in the KMDHS questionnaire: 1) questions that have pre-coded responses; 2) questions that do not have pre-coded responses, i.e., that are "open-ended"; and 3) filters.

3.2.1 Questions with pre-coded responses

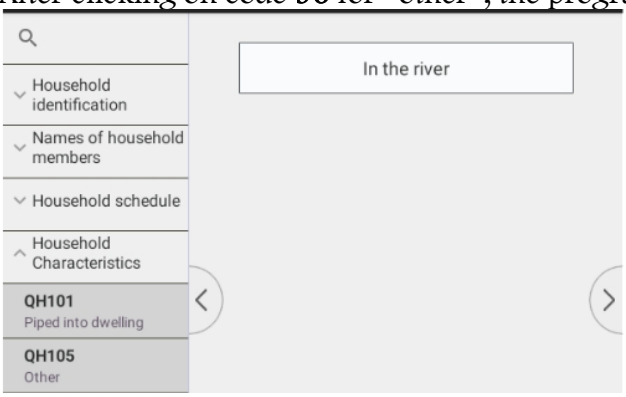
For some questions, we can predict the types of answers a respondent will give. The responses to these questions are in the questionnaire. To record a respondent's answer, you merely click the button that corresponds to the reply. Make sure that you carefully click on the middle of the circle by the code to ensure that you click on the correct code.



In some cases, pre-coded responses include an "Other" category. The "Other" code should be clicked when the respondent's answer is different from any of the pre-coded responses listed for the question. Before using the other code, you should make sure the answer does not fit in any of the specified categories. When clicking the code "Other" for a question you must write the respondent's answer in the space provided (up to 60 characters).
If you need more room, you may use the notes field for the question to provide further information.



After clicking on code **96** for "other", the program will display the following screen:



After entering the response, click the forward arrow to go to the next question. To add a longer note about the field, click in the field and then go to the top of the screen and click **on** to bring up the note window for the correct field. Then type your note in. 



Record the note and then advance to the next question. If you go back to the question, you'll see the note there, like in the example below.



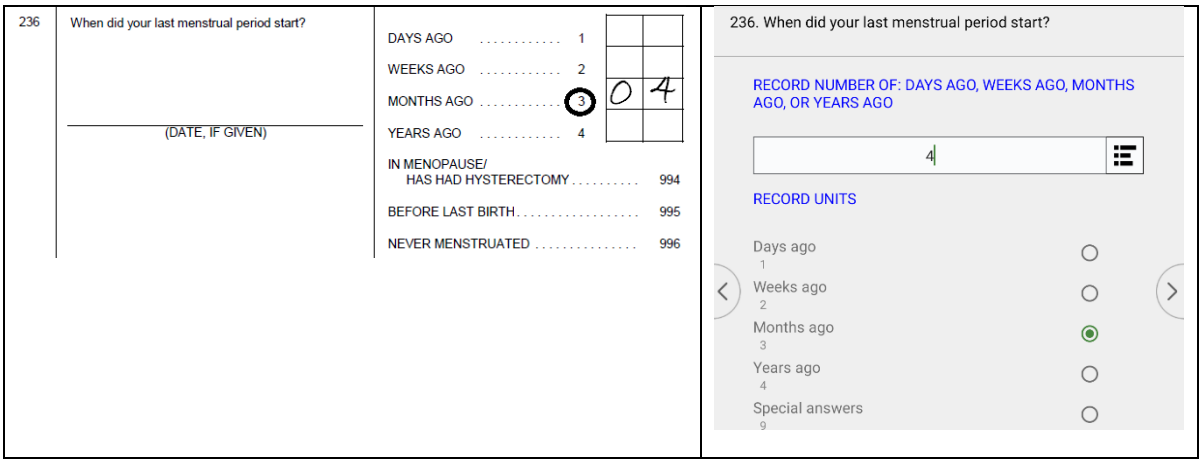
3.2.2 Responses that are not pre-coded

The answers to some questions are not pre-coded but require that you fill in the respondents' answers in the space provided.

Recording numbers or dates in boxes. In some questions, you will record a number or date in the boxes provided. There are two ways this is done:

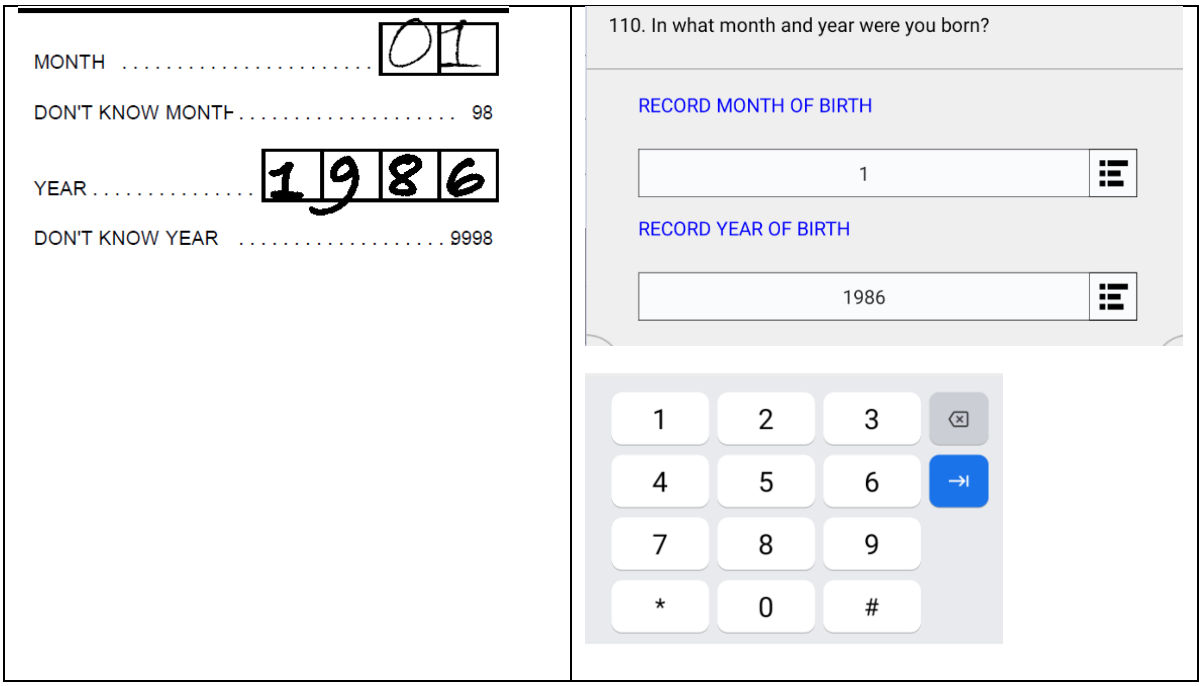
- **Boxes with codes.** Whenever the boxes are preceded by codes, you will fill in the code first, followed by the boxes to which they relate. Since respondents are most likely to mention the number first and then the unit, for example she would answer 4 months pregnant (see Q225 below). On the tablet likewise you are to enter the response "4" before the unit "2". Note that the order of entering units and numbers is reversed compared with the paper questionnaire.

  Example: If the respondent says she is four months pregnant, enter 4 for the number of months, and the click on code 2 for MONTHS.



- **Boxes without preceding codes.** Whenever boxes are present without codes in front of them, you must enter information in all the boxes.

  Example: To capture the respondent's date of birth, the month and the year are entered using the onscreen keyboard. In this example, you can see that the interviewer will need to scroll down to enter the year.



3.2.3 Filters

Filters on the paper questionnaire require you to look back to the answer to a previous question and then mark an 'X' in the appropriate box, such as Q301 in the woman's questionnaire. However, on CAPI the filters are completed automatically as the program knows the responses that have been entered for prior questions, and the program skips correctly to the next appropriate question.

3.2.4 Refusing to answer a question

If the respondent refuses to answer a question, click to add a note saying "Refused". Then, if the possible answers are given in codes, select the code at the bottom of the list (scroll down with the scrollbar if necessary). If the answer field is for a numeric answer, type in the highest value possible in the range shown. For example, if one digit, type "9"; if two, type "99"; if three, type "999".

3.3 Correcting mistakes

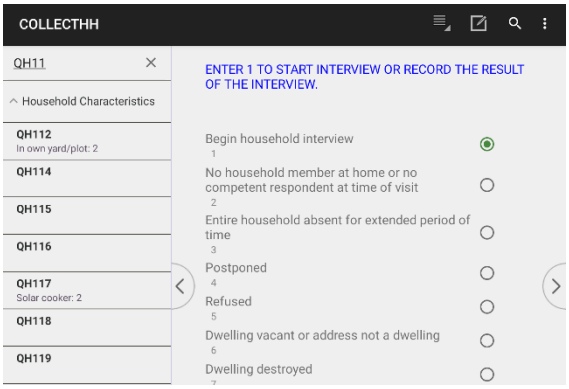
3.3.1 Moving backwards in the questionnaire

If a mistake is made during the interview, it is possible to return to the question and correct the error. It is possible to correct any question already entered, even those that come before the current section in the navigation bar. There are several methods for moving back to previously entered questions.

a) Use the left arrow button on the question to move back one field at a time.

b) If the question you wish to modify is located within the navigation bar, click on the question. You may need to click on the section title to expand questions within the section.

c) You can click on the search bar on the top left and type in the question number seen in the example below. Note that you do not need to type in the entire question number, in the example below, typing "QH11" in the search bar will give a list of all questions beginning with "QH11".



3.3.2 Moving forwards in the questionnaire

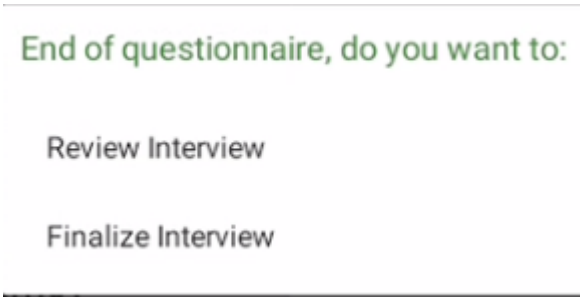
There are several ways to move forward through the questions. Note that you cannot move beyond the last question that has had a response entered.

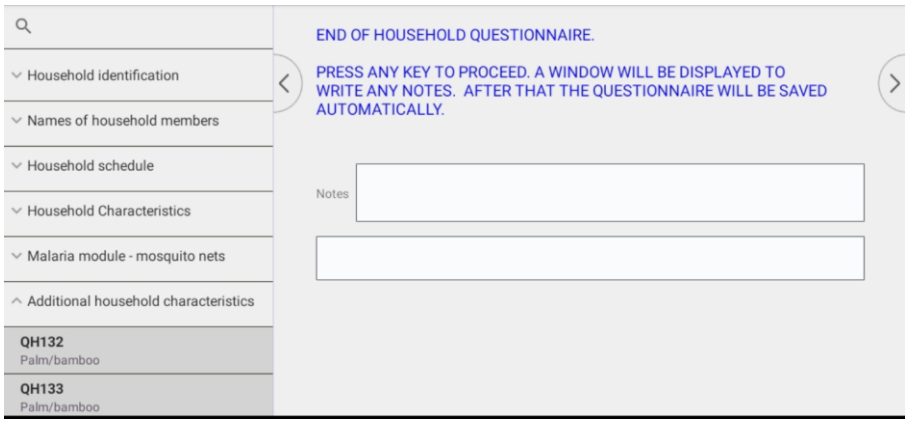
a) Use the right arrow button on the toolbar.

b) If it is desired to move to the last variable entered in the questionnaire, click on the button  "Advance to end" on the toolbar. It is not possible to move forward further than the last variable entered, so CSPro will advance only as far as the last field entered. You will then see a message saying that the value entered is out of range – this is because no value is present in the last field. Click "OK" to continue the interview.

3.4 Finishing the Questionnaire

After completing the household questionnaire, you will then be shown the following screen indicating the end of the household questionnaire. Enter any notes in the top text box

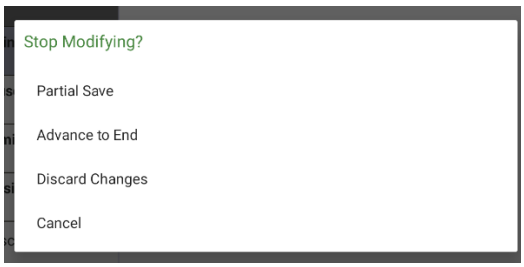




After completing the notes, and clicking the forward arrow, the program will ask to review the interview or to finalize the interview. Clicking Review Interview will take you back to the last screen of the questionnaire to allow you to review and make changes as necessary. Finalize Interview will save the data automatically in its final form, exit from the questionnaire program and return to the interviewer's main menu prompt.

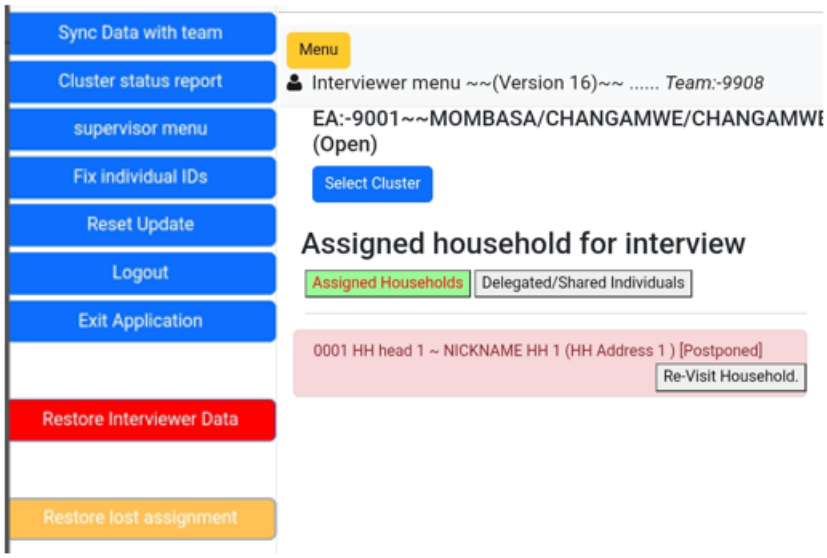
3.5 Stopping and Saving the Questionnaire

If you have begun an interview and wish to exit the interview before you have completed all the questions, click on the Android system "back" button at the bottom of the screen. The following message will appear:



Partial save will save the responses collected so that you can return and complete the interview later. Once you choose this option, the responses will saved and return to the main menu. You can return to the interview later to complete it. Click on the option « Discard » to exit the interview **without saving** the interview. Note that exiting the interview by using this option **will not save any interview data you have collected.** For this reason this option should be used with great care to ensure that data collected is not lost. Normally this option should not be used unless you have started an interview in error and wish to cancel it. Click on the option « Cancel » to go back to entry and continue the interview or entry.

Once the options "Partial Save" or "Discard" have been selected the system will exit the interview and display a list showing all questionnaires entered to date in the cluster with their identification codes (cluster, household and line number). This screen is for information purposes only.
To get back to the main menu, click the Android back button one more time and the menu will appear.

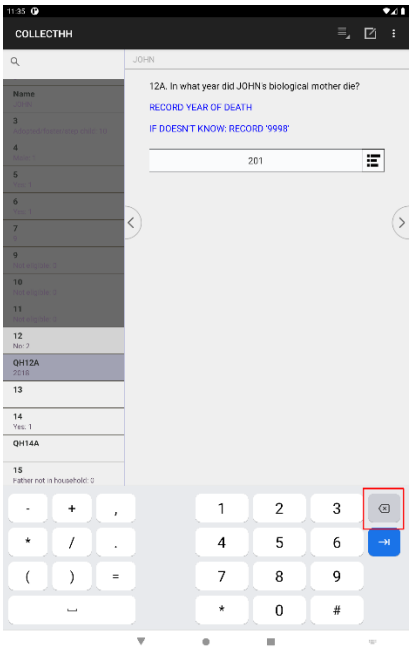


At the beginning of each section of the questionnaire, the system will automatically save the data collected up to the current question. Therefore, if the interview is interrupted by an event such as the system crashing or sudden power loss (e.g. the battery is exhausted), most of the responses collected by the interviewer will be saved. However, it is good practice to always ensure that the battery is adequately charged before beginning an interview.

Note that it is possible to do a partial save at any time during the interview by clicking on the 3 dot menu at the top right of the screen and selecting the "Partial Save" option.

3.6 Modifying Previously Entered Data and Correcting Errors

If a mistake has been made in the middle of entering data into a numeric field, the data entered can be deleted using the back button on the Android system keyboard and the field corrected.

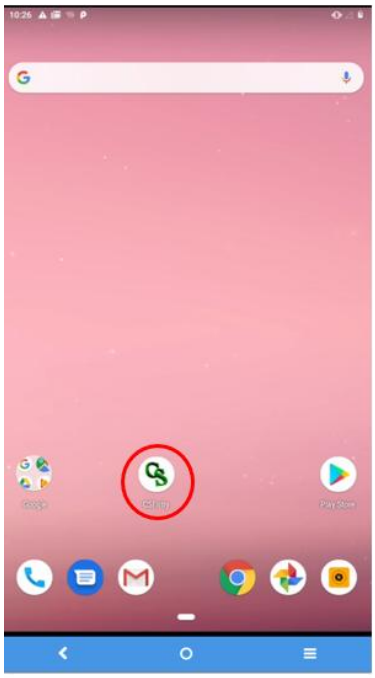


4. STARTING THE KMDHS INTERVIEWER MENU

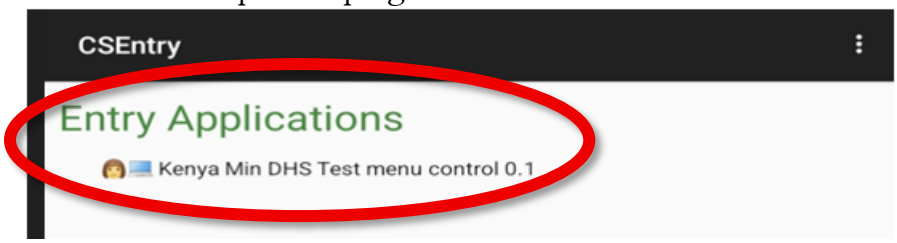
4.1 Step by Step Instructions for Starting the Interviewer Menu

To start the KMDHS interviewer menu, follow the steps shown below.

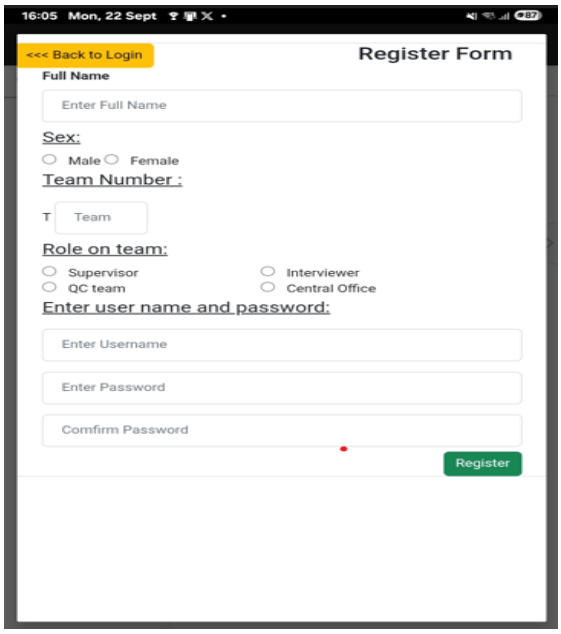
a. Click the CSentry icon on the tablet's main page. The icon is circled in red



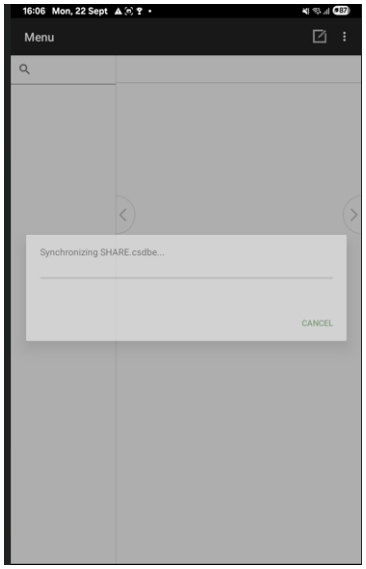
The start screen for the KMDHS system should appear after a few moments. Then you will click on DCMenu to open the program.



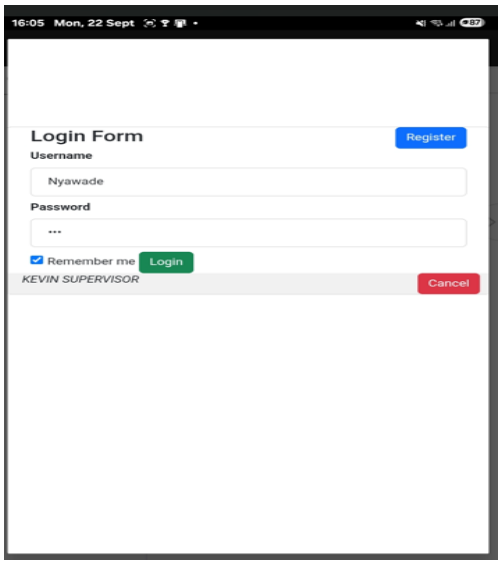
See the Mini DHS CAPI application shown above. Confirm you are working with the right application. If unsure, confirm from the supervisor and central office.



After launching the application, go to registration tab, to register by entering Full name, sex, team number (which will be provided by the central office and sampling team), enter the username and password that will be easy to remember anytime. After keying in all the above details, click the tab for registration. The information will be sent to server and stored so that anytime you come back to log in, you'll be able to register.

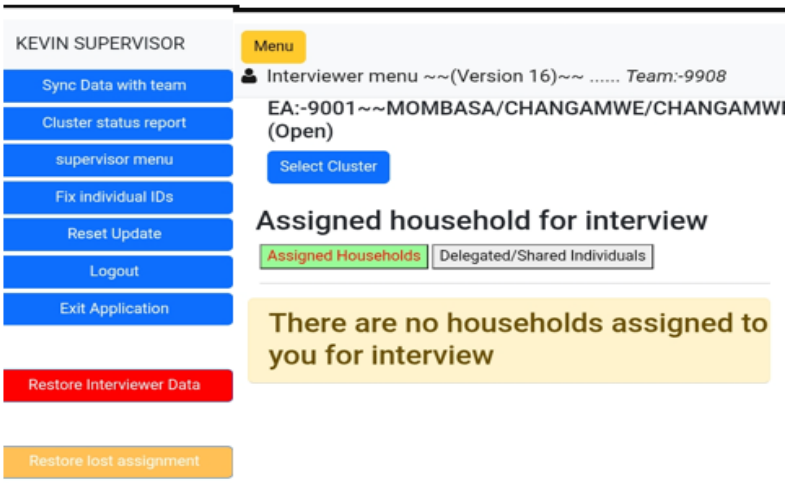


This is how the system connects to the server to update users and any other information. Give it time to complete connecting/ synching with the server. Make sure you're connected to the stable internet. You are able use Wi-Fi or mobile network connection.

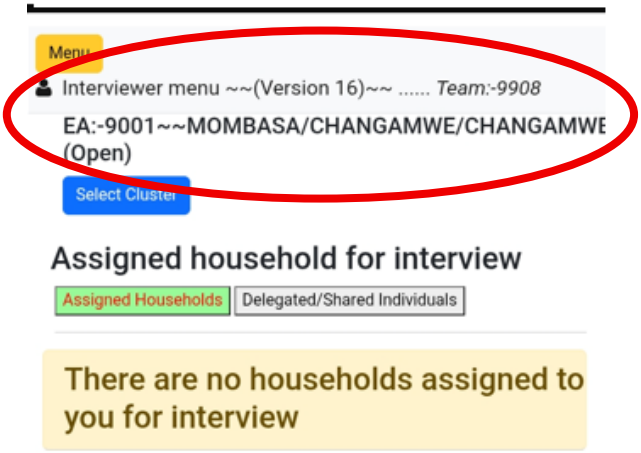


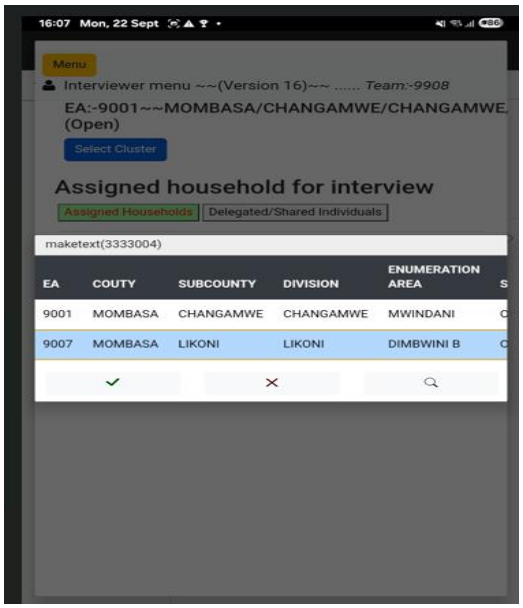
After creating and updating user credentials, you can log into the application. Use the password and username created while registering. The next time you try logging into the application, the application will remember the username and password only if the remember me box has been checked.

1. After interviewer has logged into the application, the CAPI system displays the main interviewer menu.



4.2 Confirming Team Codes and Cluster Number





This outlines the **verification process** for ensuring that each enumerator or field team is correctly assigned to their designated **team code** and **cluster number** before beginning data collection. It serves as a quality control checkpoint to prevent misclassification of survey data.

Key Elements Typically Included:

- **Team Code Confirmation**: Ensuring that each interviewer's device or login reflects the correct team identifier, which may be linked to supervisor oversight or regional assignment.
- **Cluster Number Verification**: Cross-checking that the geographic or sampling cluster assigned matches the one listed in the fieldwork schedule or sampling frame.
- **Device Setup**: Instructions for confirming these codes within the CAPI software interface—possibly via a dashboard, login screen, or preloaded assignment list.
- **Troubleshooting Guidance**: What to do if codes are missing, incorrect, or mismatched—such as contacting the field coordinator or reloading the assignment file.

Why It Matters:

- Prevents **data contamination** from misassigned interviews
- Ensures **sampling integrity** and geographic accuracy
- Supports **supervisory tracking** and performance monitoring
- Aligns with institutional standards for **neutral and accurate reporting**

4.3 Interviewer Menus

The KMDHS system uses a main menu and a series of sub-menus to execute all possible tasks that are needed for interviewers to perform their work. All these tasks are accessed through the *main menu*, either directly or through one of the sub-menus. The main menu and sub-menus are described below.

4.3.1 Description of Interviewer's Main Menu

The main menu is used to access all tasks interviewers can perform. They include starting or modifying interviews, transferring interviews to the supervisor, receiving household assignments from the supervisor, and viewing interview status and notes.

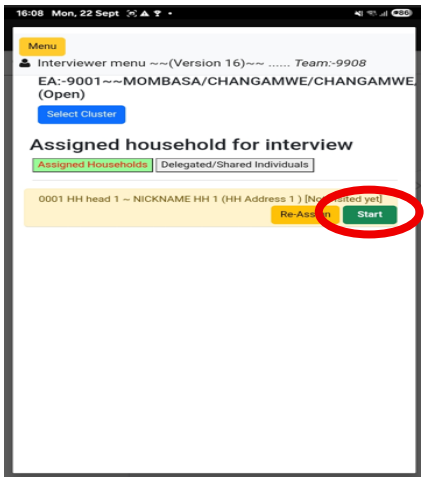
To choose a menu option, click on the option with your finger.

The first option of the Interviewer's Main Menu, **1 "Household Interview"**, is used to

- start a new household interview
- revisit a household to complete a household interview that was partially saved
- Review or edit a completed interview

4.3.2 Selecting from the Interview Menu

After selection "Start Household interview", a window with a list of households assigned to you is displayed. The list includes household numbers and addresses along with several other columns showing your code and the result of the interview (which will be zero if the household has not yet been visited). Click on the **START** button next to the household that you wish to interview. If a household was erroneously assigned to an interviewer or they wish to share extra work, then it is possible to do so by re-assigning the household interview but before opening a questionnaire.



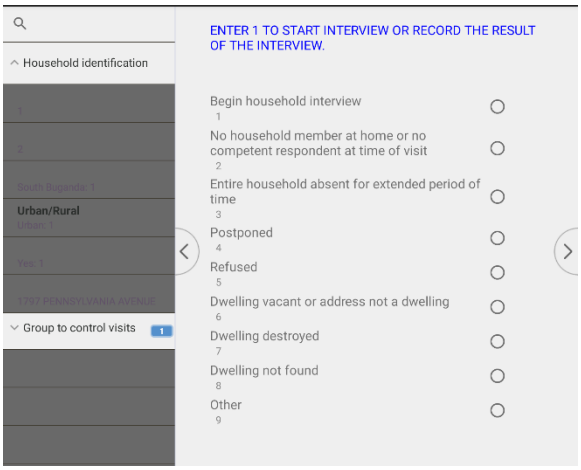
5. THE HOUSEHOLD INTERVIEW

5.1 Starting the Household Questionnaire

When a household interview is successfully selected and the interviewer confirms that it is the correct household, a screen like the one below is displayed.

1. When starting the household questionnaire, a radio button control with a list of options to determine if it is possible or not to start the interview, is displayed. Select the appropriate option for households not found, address is not a dwelling, there is no competent person available to interview, or it is impossible to interview the household for any other reason. The code for the selected option will be recorded. If there is a competent member at the household to interview, select "Begin household interview" .

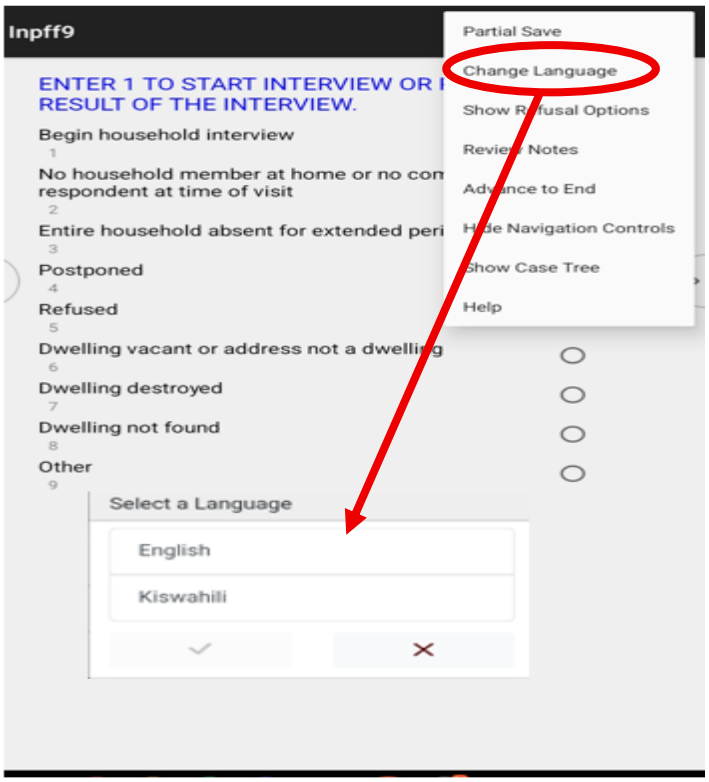
   As can be seen in the screen below there are a number of fields in the navigation bar that are pre-populated by the system. The cluster and household numbers and a selected number of geographical variables are automatically assigned by the system. The household address as well as the date and time of the visit are also pre-populated by the system. As mentioned in the introduction, these variables are protected fields meaning interviewers don't have access to any of those fields and therefore they can't change its values. However, if the values don't seem to be correct, talk to the supervisor as this could be the result of a wrong cluster assignment. It is worth noting that the system keeps track of up to five visits made to the household to secure a successful interview.



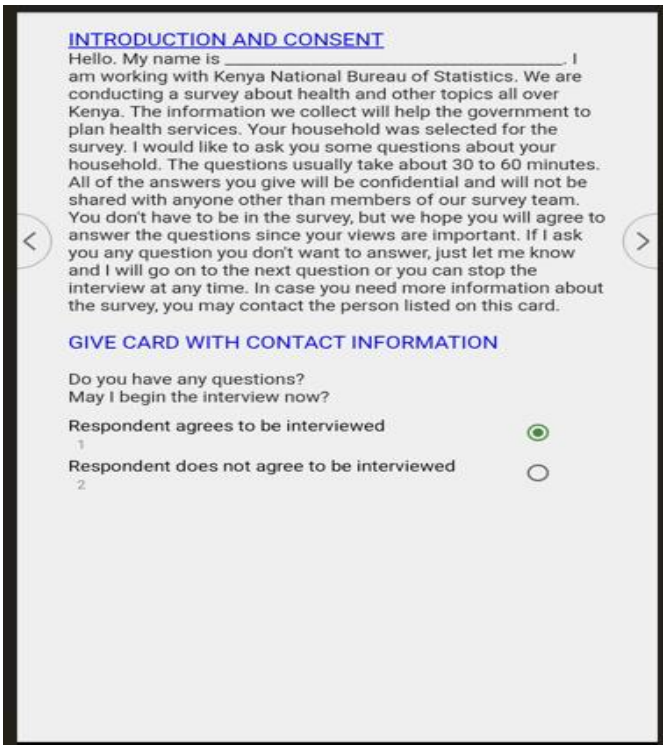
2. If a household member is present and competent to respond, entering data requires two steps: the first one is to select the response given by the respondent and the second one is to confirm that what was selected or entered was in fact the correct answer. To confirm that the selection or values entered are correct, interviewers can use the next button on the right side of the screen.

   To change the language of the questionnaire to Swahili, press the three dots in the top right (circled in red for example) on the upper task bar. There will be a dropdown and then click "Change language". Then you will see the option to choose "English" or "Kiswahili". This will establish what language will be used to formulate the questions to the respondent. Any instructions to the interviewer will stay in English. However, it is important to know that the

language can be changed at any time during the interview process using the same procedure.



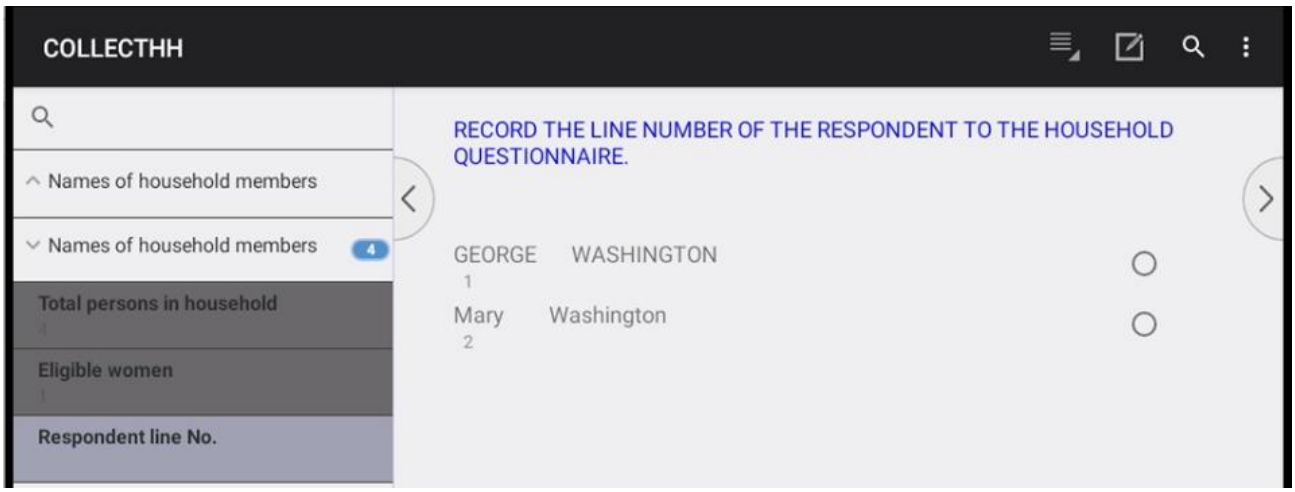
3. After the language for the interview is set, the system will ask you to read the consent to interview the respondent. State your full name at the appropriate point in the statement. Ensure that you read the whole consent statement completely and have the respondent sign the consent. Once the respondent has signed the consent, you may begin the interview.



5.1.1 Build up the household schedule

1. Interviewers will first be asked to enter basic information related to the household members starting with the head of the household. The system will require the first name of the head of the household and immediately following that, the last name of the head of the household. For the head of household, the first and last names will be shown automatically, but may be corrected if necessary. This is possible because that is the name registered in the "Household selected for a cluster" file discussed in the introduction to CAPI
2. Next, register the relationship of this person to the head of household. Note that for the first person listed in the household (the head of household) code **01 must** be selected. It is mandatory that all households have a head of household.
3. Register whether the sex of the household member is male or female. The system will display a message if the sex of a member declared as the spouse of the head is of the same sex.
4. Register whether the household member usually lives in this household. The system will display an error message if the head of the household is not a usual resident. Only under special circumstances is the head of the household not a usual resident.
5. Register whether the household member slept in the household the previous night. For an individual to be considered as a household member he/she must be a usual resident or should have spent the previous night in the household.
6. Next, record the age (in completed years) of the head of the household.
7. And finally, the respondent is asked if there are any other people living in the household. If the answer is yes, the system requests steps 1 to 6 for each additional member until all persons in the household are listed. Interviewers should make any possible effort to include all household members as adding or deleting household members later may severely compromise the integrity of the data.

After checking and making sure that all household members are included, the system will populate automatically the total number of members, the total number of eligible women listed in the household and any other type of eligibility required by the survey. Interviewers are then asked to record the line number of the person who is responding to the household questionnaire. To do that, the system will display a box with the line number and names of possible respondents (***ONLY MEMBERS 15 YEARS OLD OR MORE WILL BE SHOWN***). Click on the circle to the right of the name of the person answering the household questionnaire and confirm your selection as described previously.



5.1.2 Probe questions for additional household members

After all household members have been identified and their corresponding information entered in the household roster, the program asks three probing questions designed to check that all individuals in the household have been included. The three questions cover three different groups of people as follows:

- **Small Children**: *"Just to make sure that I have a complete listing. Are there any other people such as small children or infants that we have not listed?"*
- **Non-family members**: *"Are there any other people who may not be members of your family, such as domestic servants, lodgers, or friends who usually live here?"*
- **Guests or temporary visitors**: *"Are there any guests or temporary visitors staying here, or anyone else who stayed here last night, who have not been listed?"*

Ask each question as it is presented on the screen. If the answer to all three questions is "No", the program will continue with the rest of the household questionnaire. On the contrary, if the answer to any of these three questions is **"Yes"**, it means that the list of household members is not complete, and the missing members need to be added. Follow these steps to add missing household members:

1. The program will automatically return to the last question **"Are there any other persons living in this household**?" for the last member listed in the household schedule.

2. Change the response for this question from "No" to **"Yes".** The program will then move to a new line for the additional household member. Enter the first and last name of the member, then ask the questions presented by the system for that member.

Repeat this process for all additional members mentioned by the respondent.

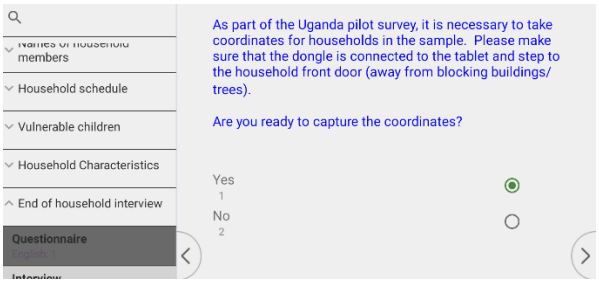
3. After all additional members have been entered and when asked: "Are there any other persons living in this household?" enter the response "No" to the question. The program will then ask you to repeat the probe questions again to ensure no household member has been missed. Repeat the probed questions to the respondent. If the answer is "Yes" to any of the probe questions, repeat steps 1 to 3 again until the response to all the probe questions is "No".

5.1.4 Continuation of Household Questionnaire

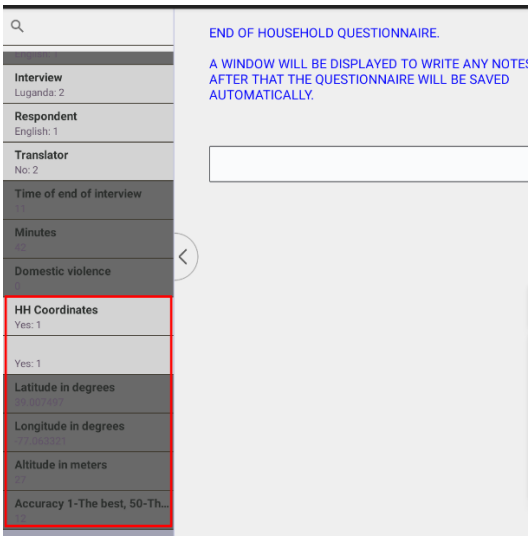
After interviewers complete the Household Roster, the program will take them through the rest of the Household Interview. Sections on household characteristics and ownership of land and animals

5.1.5 Taking GPS co-ordinates

If the household questionnaire is completed for the first time, the CAPI system will prompt to take GPS co-ordinates for the household being interviewed. Before selecting "Yes", make sure that you are outside the dwelling and are ready to take the GPS co-ordinates.

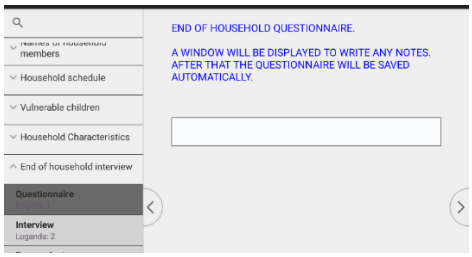


When you are ready, enter "Yes" and click the > arrow to begin GPS measurement. The system will automatically record the co-ordinates and move to the final field of the household questionnaire. You can see the co-ordinates collected in the navigation bar at the left-hand side of the screen.

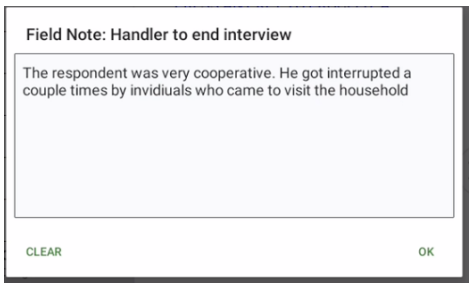


5.1.4 End of the Questionnaire

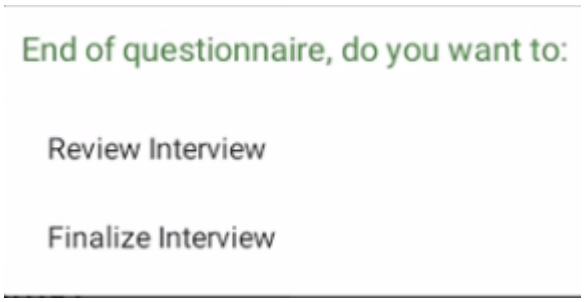
When the household interview is complete, the program automatically records the time at the end of the interview and goes to the next field with label “End of household Interview”. Click the > “>” button or the enter key in the keyboard to continue.



If in add mode, the application will proceed with the screens described in the paragraphs below. If in modify mode, the application will return to the main menu.



The program will present a box for entering any notes the interviewer wishes to type. It is important that interviewers document any event that may have been relevant to the interview process. Type any notes you wish to make into the box and click the “**OK**” button as shown in the figure.



The program will then show a window with two options “Review Interview” and “Finalize Interview”. To go back to the interview that was completed (for example, to make corrections), click “Review Interview” otherwise click “Finalize Interview” to save the interview and return to the Interviewer main menu.

6. INDIVIDUAL INTERVIEWS

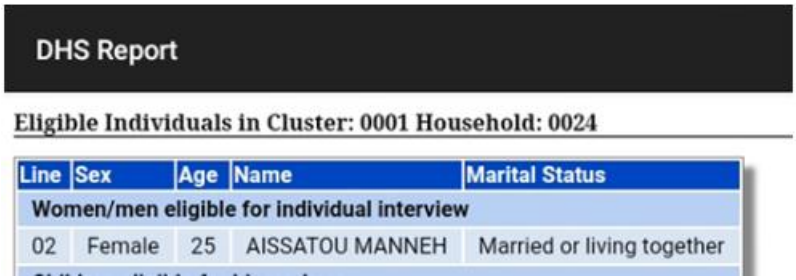
6.1 Starting the Woman or Man Individual Interview

To begin an individual interview for a woman, three conditions must be met:

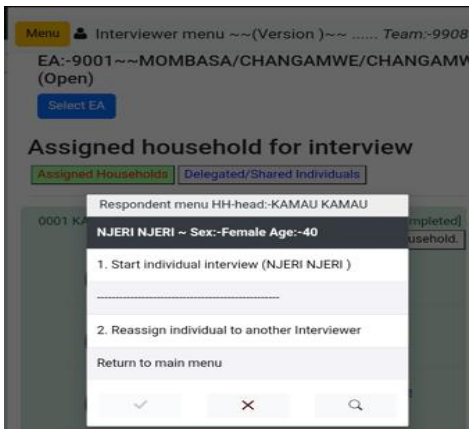
1. The household interview for the household containing that woman **must have been completed**.
2. The woman **must be eligible** for the individual interview according to the data entered in the household interview. For the KMDHS, eligible individuals are women aged 15-49 who are either usual residents (QH05=1) or slept in the household the night before the interview (QH06=1).

3. The interviewer's gender must match the gender (female) of the individual to be interviewed.

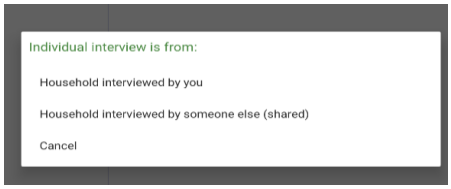
To see a list of eligible individuals, use option 2 from the main menu, **"List eligible individuals/biomarkers".** This will show a list of interviewed households. Select the household for which you wish to generate the report. The system will show a list of all the individuals eligible for an individual interview.



To begin an individual interview, select option 4 **" Individual interview"** from the main menu.

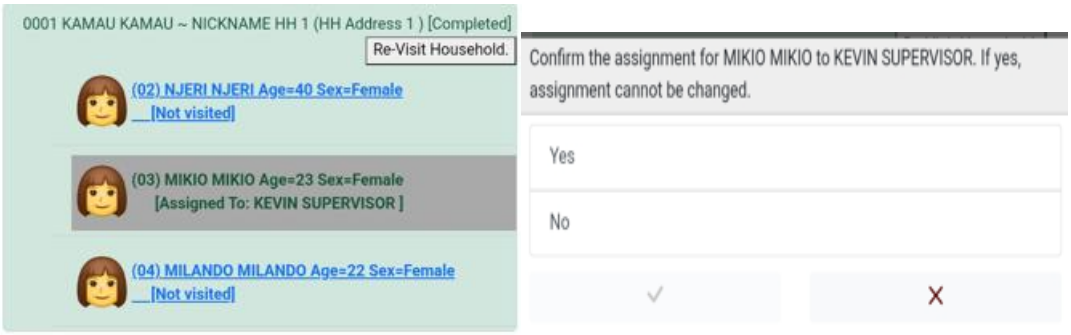


1. Interviewers then are asked to choose whether the household was originally assigned to them or to someone else.



Option 1 will show households assigned to the interviewer and **Option 2** will show households assigned to other interviewers in her/his team. It is important to note that when option 2 is used, the interviewer that originally interviewed the household must have shared the household interview with the current interviewer (as will be discussed later in section 7). This is done to properly gain access to the household-related characteristics of the individual to be interviewed.

2. Like the process used to select households for interviews, the system will show a list of households. Select the household where the individual to be interviewed lives.



3. The system then prompts to make sure that the selection of the household was correct. Select "Yes" if this is the right household or "No" to go back to the main menu. At this point the system checks if the household interview selected was completed or not (VRESULT = 1). If it isn't completed the system will go back to the main menu, otherwise the household selection process is completed at this point. If you received a completed household interview from another interviewer, but they system says it's not complete, please try transferring the household questionnaire again.

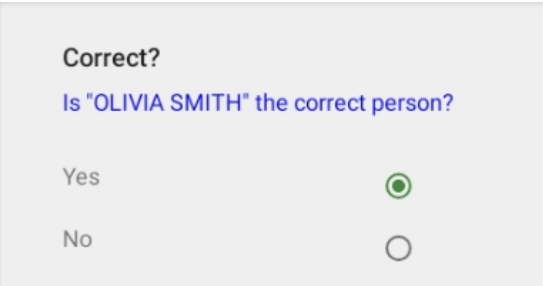
4. After selecting the correct household, if the household contains eligible respondents, the program will show a window with a list of respondents eligible to be interviewed.



The list includes the code of the interviewer who originally collected the household questionnaire, the household number, the line number of the individual in the household roster (ZLINE), the individual's name, the type of questionnaire and the status of the individual questionnaire. It is also important to keep in mind that the system will show ***ONLY ELIGIBLE INDIVIDUALS OF THE SAME SEX AS THE INTERVIEWER.***

Click on the button for the line with the name of the individual you want to select to perform the desired operation. Then click select to proceed.

5. Interviewers are then asked to confirm that the individual selected is the correct one. If it is correct, select "Yes", the application to collect individual questionnaires is automatically launched and the interview can proceed. If "No" is selected the program returns to the main menu.



6. Interviewers then will be asked one more time to confirm that the individual selected is correct. This is done because once this question is answered, the individual is registered as visited and if it isn't the right person it will require several steps to fix the problem. If this is the individual to be interviewed option "Yes" should be selected. If option "No" is selected the application returns back to the main menu and there is no record that this individual was visited.

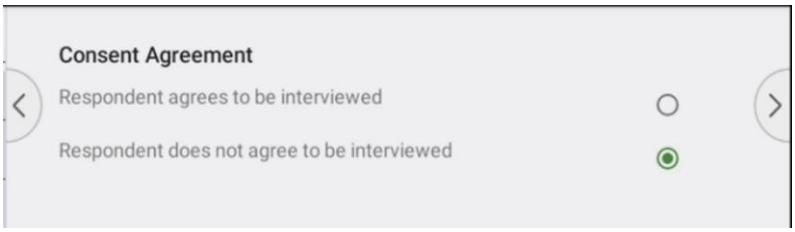


7. The next step is to decide on the result of the visit. To start the interview, select the first option "Begin individual interview".

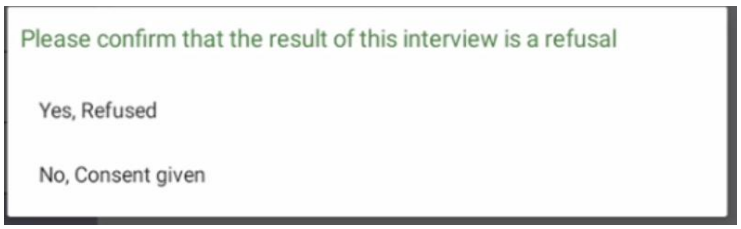


The cluster number, household number, line number, the name of the individual, and the date and time of the visit are automatically filled by the system. The system also keeps track of up to five visits to complete the individual interview in the same fashion as with the household questionnaire. Interviewers do not have access to any of those fields and therefore can't change their values.

8. Immediately after entering code 1 to begin the individual interview, interviewers are required to follow the same procedure as that used for households to obtain consent. If consent is granted, select the option "Respondent agrees to be interviewed". Please remember that they need to sign the consent form as well. If consent is not granted select option "Respondent does not agree to be interviewed".

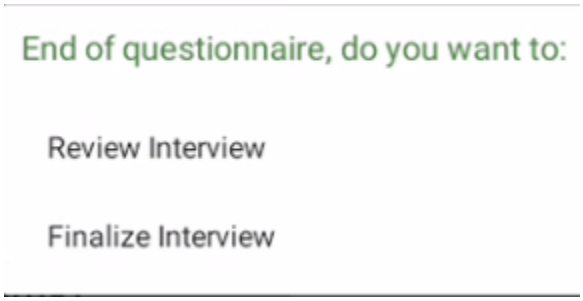


If the second option is chosen, the system displays another window requesting to confirm the refusal.



If "Yes, refused" is selected the application changes the result code of the visit to "Refused" and a window to confirm the finalization of the interview is displayed.

If option "Review Interview" is selected, the application will return to the field in step 7, to confirm if the individual selected is the correct one and the process continues from that point again. If option "Finalize Interview" is selected, the data is saved, the system quits the individual interview application, and the program returns to the main menu.



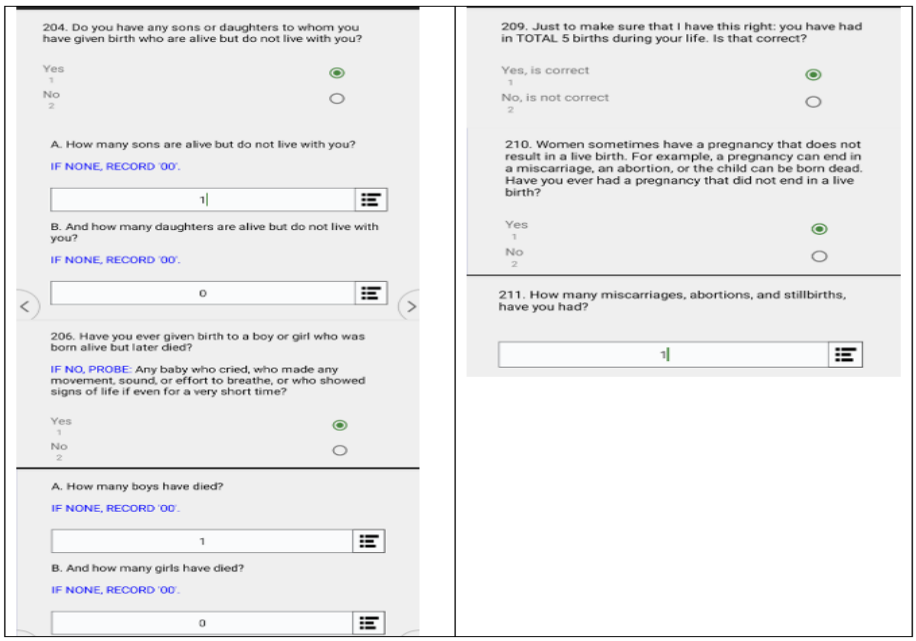
9. If the consent is granted, the application proceeds to collect the respondent's responses to the individual questionnaire, in the same way as with the household questionnaire. However, there is one section in the questionnaire that provides critical information to the survey and that deserves additional clarification. The section is the Reproduction and Pregnancy History.

6.2 Reproduction Section and Pregnancy History

6.2.1 Completing Questions Q201-Q210 and Initial Listing of Births

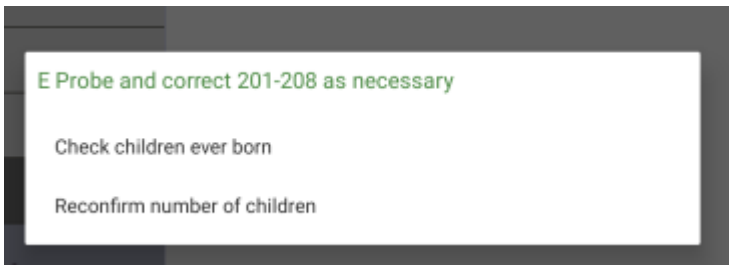
The reproduction and pregnancy history sections are completed in two steps. First the respondent provides a summary of all birth and pregnancy losses that she has ever had in the reproduction section. The information requested here is categorized according to sex, residence status, living status for the ever-born children and pregnancy losses. It is critical to obtain the right information in this section, because this along with the information to be provided in the pregnancy history will be used by the CAPI system to control the entry of those sections of the questionnaire that follow, for example, sections 4 and 6.

The example below shows that this woman has in total 6 pregnancies: 5 of them resulted in births (5 children) and the other one was a pregnancy loss:



1. **By sex**: 3 boys and 2 girls.
2. **By living status**: 4 alive and 1 dead.
3. **By residence status**: 3 living with her, 1 not living with her and 1 dead.
4. **Pregnancy losses**: 1 pregnancy lost

At question Q209, the respondent is asked to confirm that the total number of births she has declared is correct. If the answer is: "2-No, is not correct", the application goes back to the beginning of the reproduction section to probe for the correct number of children.



If the answer to this probe question is "Yes, is correct" the system proceeds to Q210, and asks if she ever had a pregnancy that did not end in a live birth. If she responds "Yes", the system asks her the number of pregnancy losses in Q211.

The program uses the response totaled in Q208 and asks in Q209 if the total number of children born to the respondent, is correct. The program also adds Q208 to Q211 to calculate the total number of pregnancies in Q212. The information in this question (Q212) is then used to decide the number of pregnancies that are to be listed for the pregnancy history.

It is very important to ensure that the total of pregnancies given (in other words, the total children given in Q208 plus the total of pregnancy losses in Q211) for this question (Q212) is correct before proceeding, since correcting it later can take time and disturb the flow of the interview.

6.2.2 Completing the Pregnancy History Section

The system then moves to the pregnancy history section. This is completed in two parts as follows:

Part 1. Introductory Roster

Single or multiple pregnancy	Q215
Pregnancy outcome	Q216
Baby cry, move or breathe	Q217
Child name	Q218
Sex of child	Q219
Date of birth/end of pregnancy	Q220
Duration of pregnancy	Q221
Pregnancy between this and prior pregnancy	Q222

Part 2. Continuation roster

Pregnancy outcome (final)	Q223
Child is still alive	Q224
Current age of child	Q225
Child living with respondent	Q226
Line number in the household	Q227
Age at death	Q228

The CAPI program will ask the questions in Part1, the introductory roster, (Q215-Q222) for each pregnancy reported by the respondent in Q201-Q212. Once the introductory roster is completed, the CAPI program will then ask the questions in Part 2 Continuation roster (Q223-Q228).

For the most part, completing the pregnancy history on the CAPI system should be straightforward if the concepts explained in the questionnaire content training are well understood. However, there are some aspects of completing this section in the CAPI system that require additional explanation and are described below.

Using the navigation bar and pregnancy menu from the CAPI toolbar

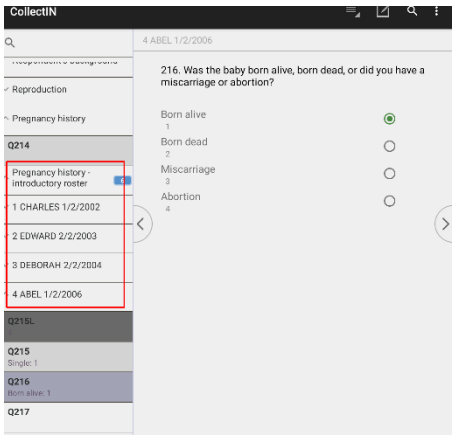
When completing the pregnancy history table, it is important for the interviewer to be able to keep track of where they are in terms of which pregnancy items have been entered, and which remain. This is particularly important when resolving situations where pregnancy outcomes are listed out of order, or when the information in the pregnancy history table is inconsistent with the summary totals recorded in the reproduction section.

To assist the interviewer in being able to view the pregnancy history entries as the section is being completed, the MDHS CAPI system provides two useful tools:

1. The navigation bar at the left-hand side of the screen
2. The “show pregnancies” option found in the pregnancy menu of the CAPI toolbar.

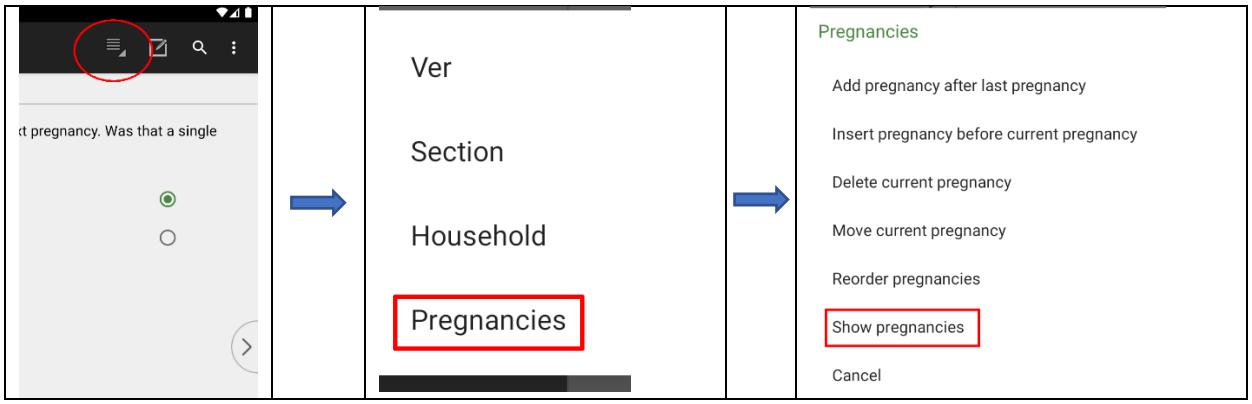
Navigation Bar in Pregnancy History Table

The navigation bar is discussed in more detail in section 2.2.3 Navigation bar of this manual. As the pregnancy history table is completed, it will show the names and dates of birth/pregnancy end for each entry at the left-hand side of the screen. The interviewer can refer to this information to get a sense of the overall structure of the pregnancy history table that they are completing, particularly with respect to the order of births.



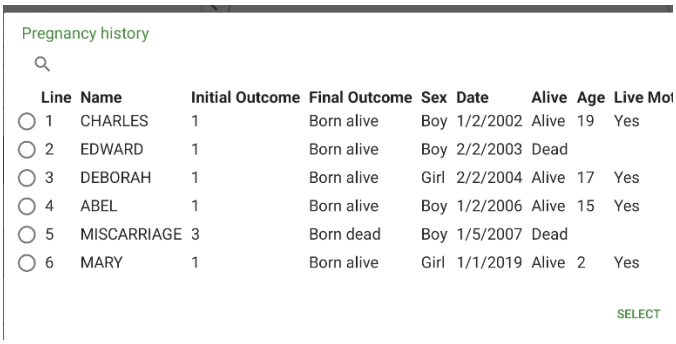
Use of “Show pregnancies” report from the CAPI toolbar

The “show pregnancies” report can be accessed from the CAPI toolbar under the “Pregnancies” option as shown below.



A report will be generated showing the key elements of the pregnancy history information that has been entered. This includes name, initial outcome of the pregnancy as reported by the respondent, outcome as determined by the CAPI system, gender, date, survival status, age and whether the child lives with the mother. The interviewer should use this report wherever they need to get a quick summary of all pregnancy outcomes reported in the pregnancy history. It is particularly useful when trying to resolve inconsistencies between the pregnancy history table and the summary totals in the reproduction section, since it enables the interviewer to see briefly how many pregnancy outcomes of each category are present in the table.

For example, we can see quickly by looking at the example below that there are four children who are alive and living with the mother, two girls and two boys, together with one boy who has died, and one miscarriage.



Treatment of non-live pregnancy outcomes in the pregnancy history

Pregnancies that did not result in live births, that is, stillbirths, miscarriages and abortions, are treated differently from live births by the CAPI system when completing the pregnancy history. The key points to note are as follows:

1. The name field for the pregnancy will be automatically filled by the CAPI system with the type of outcome. For example, for a stillbirth, the text "STILLBIRTH" will appear in the name field for that pregnancy.
2. The question text for Q220 will change to "On what day, month and year did this pregnancy end" instead of ".. was [Name] born".
3. Questions Q225 – Q228 will be skipped. Question Q224, survival status, will be automatically completed by the CAPI system with a "No" response.

Reclassification of stillbirth to deceased live birth

In some cases, a respondent may report a birth as a stillbirth which is reclassified to a deceased live birth based on the response to Q217 "Did the baby cry, move, or breath". For example, a respondent gave birth to a child who died immediately after the birth. Her response to Q216 is "born dead", but she says that the child cried before it died in her response to Q217. In such a case, even though the initial classification by the respondent is that the pregnancy ended in a stillbirth, the CAPI system reclassifies this pregnancy as a deceased live birth based on her response to Q217. Note that in this case, the CAPI program will treat this pregnancy as a child who was born alive but later died, not a stillbirth. This has the following effects:

1. The field for the child's name will need to be completed
2. Questions Q224 – Q228 will need to be completed for this pregnancy since it is not considered a stillbirth, despite the response to Q216. An information message 2231 will be displayed by the CAPI system prior to asking Q224 – Q228 alerting the interviewer that the stillbirth reported by the respondent is now classified as a live birth by the CAPI system
3. Note that when the CAPI system checks totals between the reproduction section and the pregnancy history it will treat any pregnancies reclassified in this way as stillbirths for the purposes of the consistency check only. The reason for so doing is that the reproduction section responses are based on the respondent's classification of pregnancies.

Inserting additional pregnancies

Sometimes you may encounter situations where the respondent did not report all her pregnancy outcomes in the reproduction section during questions Q201-Q211, but as the pregnancy history table questions are asked, she reports the existence of more pregnancy outcomes.

Additional pregnancy outcomes can be identified in three ways:

1. The respondent responds "Yes" to question 222 "Were there any other pregnancies between the previous pregnancy and this pregnancy?".
2. The respondent responds "Yes" to Q229 "Have you had any pregnancies that ended since the last pregnancy mentioned?".
3. The respondent informs you during asking of questions in the pregnancy history table that there is an additional pregnancy outcome that she did not report in the reproduction section.

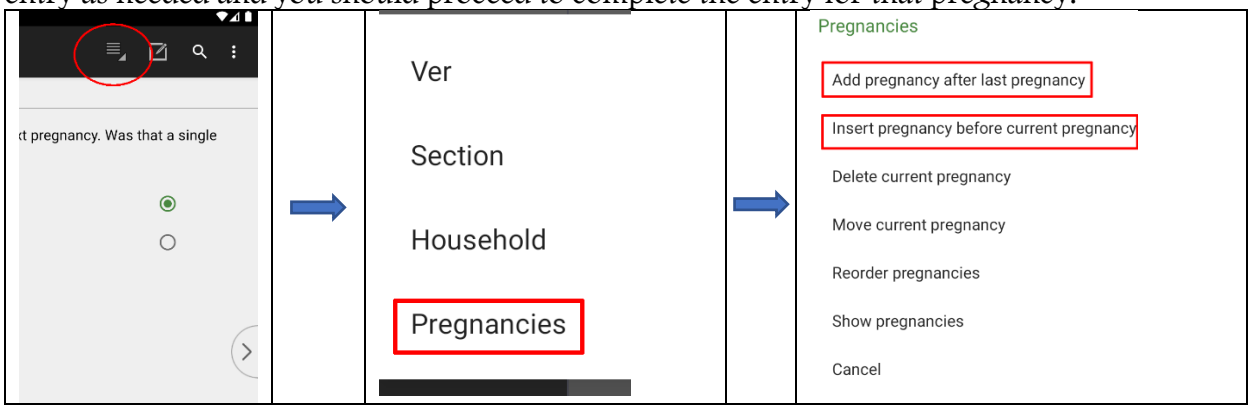
Where there is a "Yes" response to either Q222 or Q229, the system will show a prompt as shown below asking the interviewer whether they wish to insert a new pregnancy before the current pregnancy.



To insert another pregnancy outcome, select "Yes". The CAPI system will generate a new entry in the introductory section of the pregnancy history, and move to the beginning of that section starting with Q215. The interviewer will then ask and complete questions Q215-Q222 for the additional outcome, and then move to the next pregnancy outcome in the table.

Note that when inserting pregnancy outcomes, the insertion is always done **before** the pregnancy for which the "Yes" response to Q222 was given. Where there is a "yes" response to Q229, a pregnancy outcome will be added after the last existing entry in the pregnancy history table.

In some cases, you may wish to insert an additional pregnancy outcome in the table manually, that is, without needing a "Yes" response to Q222/Q229. To do so, click on the toolbar menu, then select "Pregnancies", then "Insert Pregnancy before current pregnancy". In some cases you may need to add a child after the last pregnancy, in which case you should use the option "Add pregnancy after last pregnancy" instead. In both cases the CAPI system will insert or add a new entry as needed and you should proceed to complete the entry for that pregnancy.

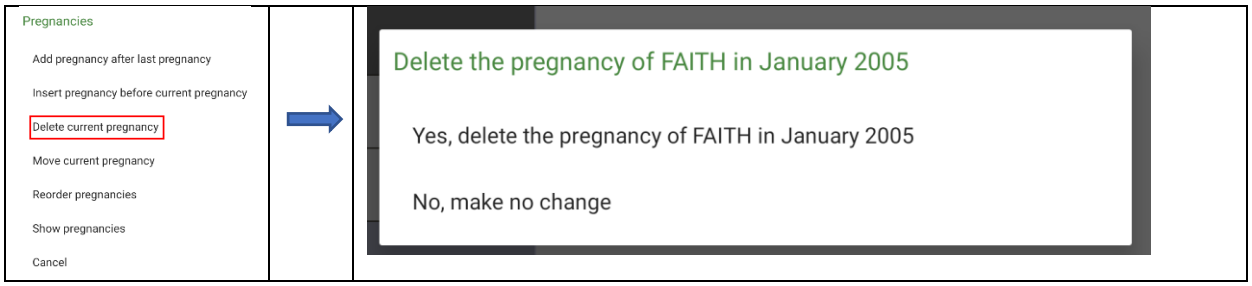


Deleting pregnancies in the pregnancy history table

Sometimes it may be necessary to delete an entry for a pregnancy outcome in the pregnancy history table. For example, a respondent might mistakenly report a child who is not their

biological child in their responses to Q201-Q208 in the reproduction section and inform the interviewer about this once the interview moves to the pregnancy history section.

To delete an entry for a pregnancy outcome in the pregnancy history section, first, move to any field within that entry. Then, click on the "Pregnancies" option in the toolbar, and select the option "Delete current pregnancy".



The program will then delete all questions for the current pregnancy outcome in the pregnancy history section including questions in the introductory and continuation sections. It will then move to Q215 for the next entry immediately following the deleted entry.

Be very careful when deleting entries since there is no "undo" feature in the CAPI system. Be sure to confirm that the entry you wish to delete is the correct one before answering "Yes, delete the pregnancy…"

Note that after you have deleted an entry in the pregnancy history, you will need to go back to the reproduction section to check, and if necessary, update the totals of children to be consistent with the updated pregnancy history table.

Changing the order of pregnancy outcomes in the pregnancy history table

The pregnancy history table is completed by listing all the pregnancy outcomes the respondent has had in the **order in which they occurred, starting with her first pregnancy.** The CAPI system will check the order of pregnancy outcomes based on either the date of birth for live births, or the date the pregnancy ended if the pregnancy outcome was not a live birth. The checking is done after the entries for all pregnancy outcomes have been entered. If a pregnancy outcome has been listed out of order, the CAPI system will generate an error message.

As an example, a respondent lists her pregnancy outcomes in the order shown in the table below. We can see by looking at the dates given for the pregnancy outcomes that they are not given in the correct order. Mary should correctly be listed as the second pregnancy outcome between those of Boy and Paul, instead, she has been listed after Paul.

Name	Outcome type	Day	Month	Year
BOY	Live birth-deceased	22	04	2005
PAUL	Live birth	17	03	2010
MARY	Live birth	06	01	2007
MDHSCARRIAGE	miscarriage	05	06	2012
GRACE	Live birth	25	11	2018

Assuming that the interviewer enters the pregnancy outcomes in the order they are given above, the CAPI system will generate an error message once all the information for Grace, the last pregnancy, has been entered. The message will indicate which pregnancies are listed out of order and give the interviewer the choice of which pregnancy to move to and correct the information about pregnancies.

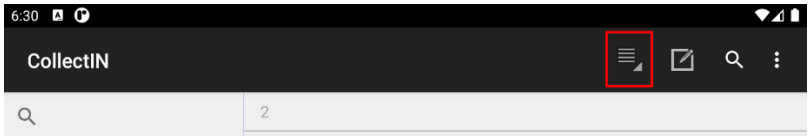


Typically, there are two possible reasons why pregnancies can be flagged by the CAPI system as being listed out of order:

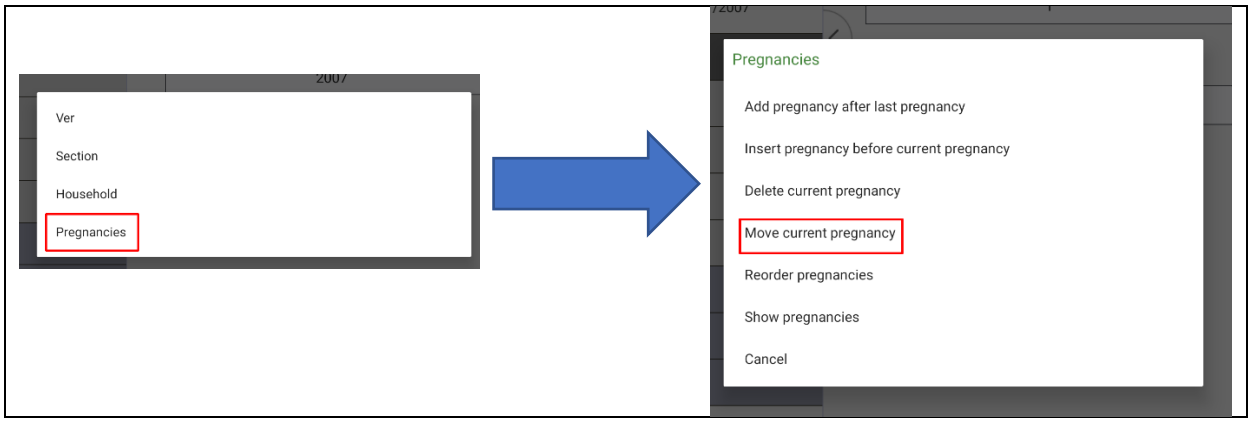
1. The date of birth given for one of the pregnancies is incorrect but the order of the pregnancies is correct
2. The dates of birth given are correct, but the order of the pregnancies is incorrect

To correct cases where a date of birth is incorrect, in the prompt given by the CAPI system, select the pregnancy for which the date of birth needs correction, move to that entry and correct the date of birth.

To correct the order of births, you first need to decide which pregnancy you wish to move. Note that the KMDHS CAPI system can only move pregnancies **up** the pregnancy history table and not down. That is, pregnancies can be moved to an earlier position but not a later one. Therefore, when deciding which pregnancy to move to correct the order, you should always choose the second of the two pregnancies listed in the message prompt, which will be a more recent pregnancy. In our example case, we would select the option "Correct date of pregnancy for MARY". The CAPI system will then move to Q215 in the entry for Mary. To move the pregnancy of Mary up in the pregnancy history table, click on the CAPI toolbar button at the top right hand of the screen

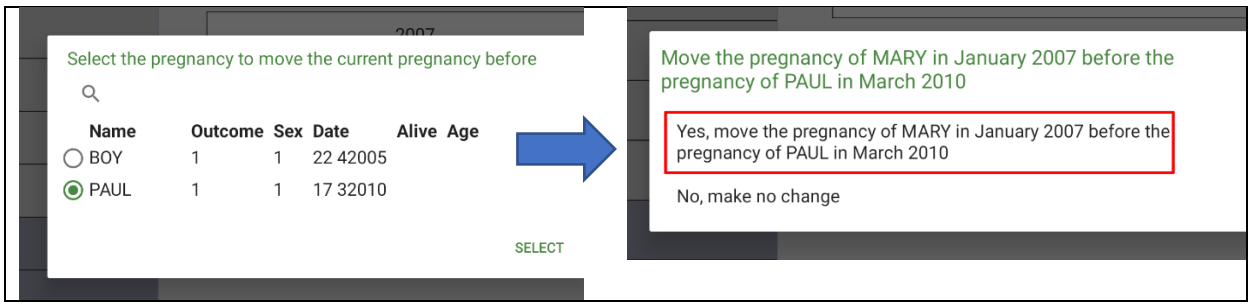


Then select the option "Pregnancies", then "Move current pregnancy".



The CAPI system will then display a list of all pregnancies coming **before** the pregnancy of Mary in the pregnancy history and ask which pregnancy you wish to move the current one before. Select the pregnancy you wish to move the pregnancy of Mary before and click "Select". The system will prompt you to confirm the selection, click "Yes.." to confirm and the system will move the pregnancy to the position just before the selected pregnancy. If you wish to cancel the move, select "No, make no change" and the system will return to entry of the current field without changing the order of pregnancies.

After the pregnancy is moved, the focus will return to the current field being entered in that same entry.



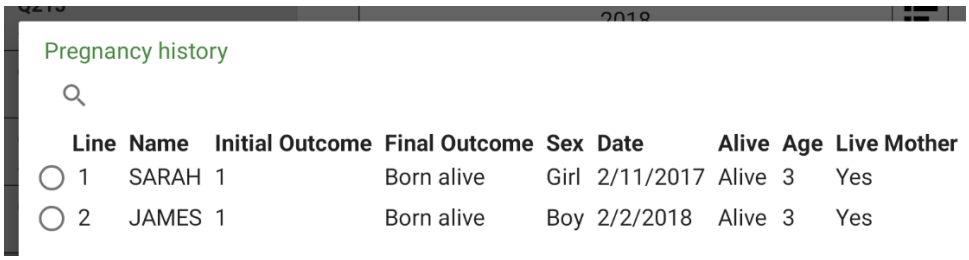
Correcting problems with pregnancies being entered in the wrong order in the pregnancy history itself is time consuming and can disrupt the rapport between the interviewer and the respondent. To avoid this problem, be sure to take your time to accurately establish the order of pregnancies when initially listing these pregnancies along with their information and children's names where applicable.

Note that in cases where more than one pregnancy is listed out of order you may need to repeat the process described above to move each birth that is out of order into the correct position.

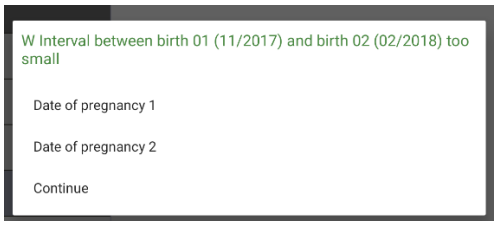
6.2.2.2 Birth intervals are too short

The KMDHS CAPI system checks the interval between pregnancy outcomes. The application uses the children's dates of births or date of end of pregnancies to make sure that pregnancy outcomes are at least 9 months apart. The interval is checked for all pregnancies after the Pregnancy History is completed.

In the example below, the respondent reports that she had two live births, but looking at the dates given for the births, they are only 3 months apart.



Once all the information is entered into the pregnancy history table, the CAPI system checks the intervals between births and displays an error message for each interval that is too short.



The message identifies the order and dates of birth of the two children with the reported birth interval that is causing the problem. The message normally appears twice as the order is checked twice, in ascending order from the oldest to the youngest and in descending order from the youngest to the oldest.

To resolve the problem, carefully read the error message and identify the children and dates of birth involved. Use the "Show pregnancies" option from the CAPI toolbar to show the list of pregnancy outcomes entered together with the dates of birth/end of pregnancy. In the above example, the problem is caused by the interval between the birth of the first child (Sarah) who was born on 02/11/2017 and the second child (James) who was born on 02/02/2018. In this example there is only an interval of 3 months between the births.

When resolving issues with intervals between pregnancies, first check that the date of birth/end of pregnancy has been entered correctly. Verify that the day, month and year for both pregnancies identified in the message were correctly keyed and confirm with the respondent if necessary. If the respondent confirms that the dates are correct, carefully discuss with the respondent to determine if correct dates can be identified.

If it is not possible to arrive at dates of birth which yield an acceptable minimum interval, you must make a note to explain why the dates cannot be corrected. To make the note, move to the date of birth/end of pregnancy field for the **first birth identified in the message**, click the three-line button in the toolbar, then click on "Note". A blank window is displayed. In the note, confirm that you discussed the dates with the respondent and could not establish dates with the expected interval, and include any information that may help the staff in the central office to determine a correct interval between the pregnancies.

6.2.2.3 Resolving inconsistencies between Q203-Q212 and the Pregnancy History

Once the pregnancy history table has been completed, the MDHS CAPI system checks the consistency between the reproduction section summary (questions 201-212) and the pregnancy

outcomes reported in the pregnancy history. When collecting the Pregnancy History, the application checks that the total of pregnancy outcomes listed in the table for questions Q215-Q228 is **not less than** the total number of pregnancy outcomes reported for Q203-Q211 in Q212. In other words, the number of pregnancy outcomes listed in the pregnancy history table cannot be less than the total of live births in Q208 plus the total of pregnancy losses reported in Q211. Note that there can be more pregnancy outcomes listed in the pregnancy history than reported in Q208, but not the reverse.

In practice this means that if the interviewer deletes an entry in the pregnancy history table, they will have to go back and update the totals in Q203-Q212. If pregnancy outcomes are added, the totals for Q203—Q212 do **not** have to be updated.

6.2 Entering the Calendar

The calendar is used to record information about the timing of recent events. It records information about women's experiences with childbearing, contraceptive use, and discontinuation of use of contraceptive methods. The calendar in the KMDHS covers the last 6 years of events before the date of the interview, from January 2017 to the date of interview in 2022.

One of the benefits of the CAPI system is that most of the calendar is filled automatically by the system. Key events, comprising pregnancies, current pregnancy status, terminations, and current use of a contraceptive method are automatically added to the calendar as they are collected as the interview progresses. Once these events are captured automatically, the next step is for the interviewer to complete the calendar information by asking the respondent a series of questions about their use of contraceptive methods in the periods of time between those events. This is done in the "Episodes of contraceptive use" section, which immediately follows the questions about the respondent's current use of contraception in section 3 of the questionnaire.

This section of the manual will first describe the automatic collection of the key events into the calendar by the CAPI system and will then go on to discuss the Episodes of contraceptive use section.

1. Birth History and reproduction section

Filling of the calendar by the CAPI system begins with the birth history. As soon as the application determines that a birth occurred in the calendar period, the CAPI system will record information about that birth into the calendar.

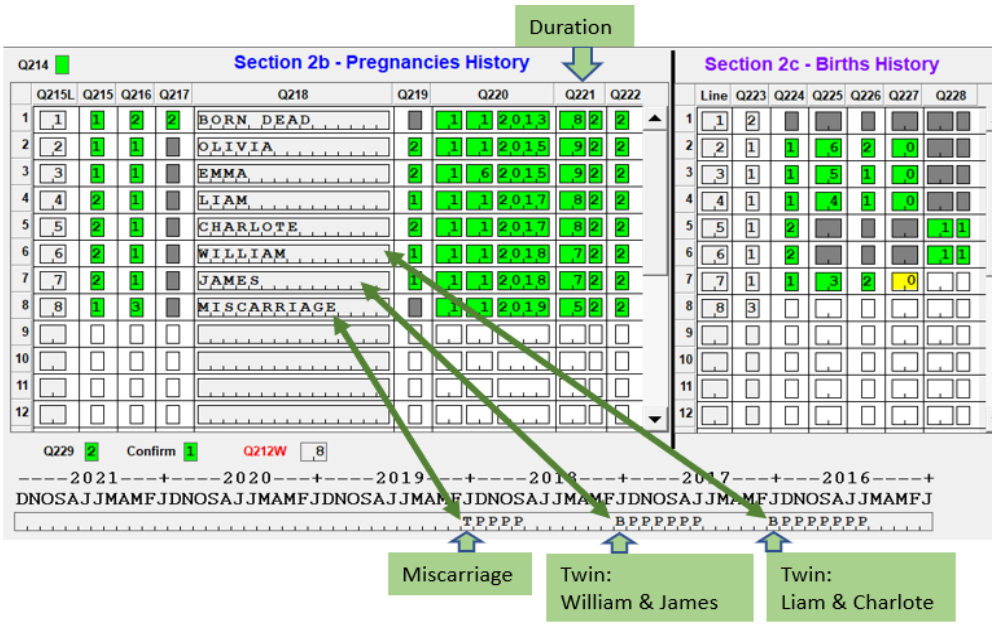
The system places a ***"B"*** in the month of birth for each child born in the calendar period. The letter B is preceded by as many letters as the number of months the respondent declared for the duration of the pregnancy. The number of "P's" is one month less than the number of pregnancy duration months declared by the respondent because the month of birth is also considered part of the pregnancy duration. In the case of twin or more than twins, the system will place only one "B" in the month of birth, followed by the number of "P's" declared in Q221.

Terminations: pregnancies not ending in a life birth are called terminations. There are three ways that pregnancy can be terminated. If a pregnancy ends early and involuntarily, it is a **miscarriage**. If a woman voluntarily ended a pregnancy, is an **abortion**. If a woman gave birth to a child that showed no signs of life, is **a stillbirth**. Termination and its duration must be

collected as part of the pregnancy history. All births and/or terminations that occurred in the calendar period will be placed in the calendar.

For terminations, the system places a "T in the calendar in the month where the termination ended. The termination code is preceded by minus many P's minus one as the number of months the respondent declared that the pregnancy for the termination lasted.

The diagram below shows the pregnancy history form and calendar filled by the system using the Windows CSPro interface to show all the fields together. However, the CSPro system on Android functions in the same way, with the only difference being that questions are shown one per screen.

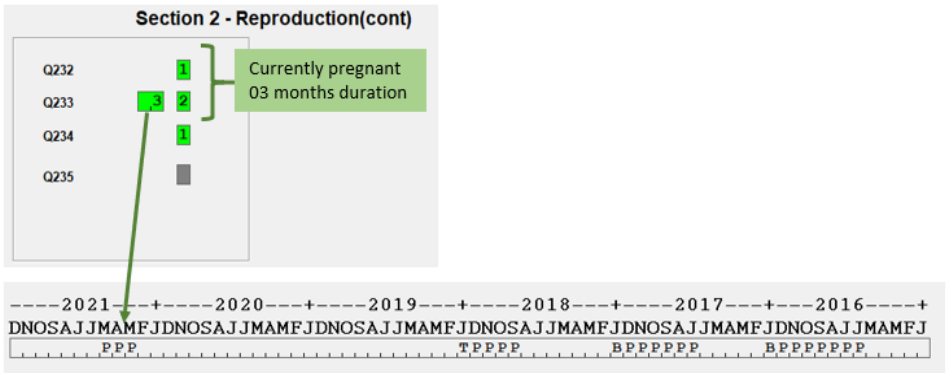


- In the figure above there are one miscarriage and 3 children born in the calendar years window (2021-2016). Questions Q220 (date of births and date when pregnancy ended) and Q221 (pregnancy duration) are used by the application to fill the calendar. The termination lasted 5 months, the first twins lasted 8 months and the second pair of twins lasted 7 months.

2 Current pregnancy and Contraceptive use section

Current pregnancy and contraceptive use are mutually exclusive. If the respondent is currently pregnant then current contraceptive use questions will be skipped.

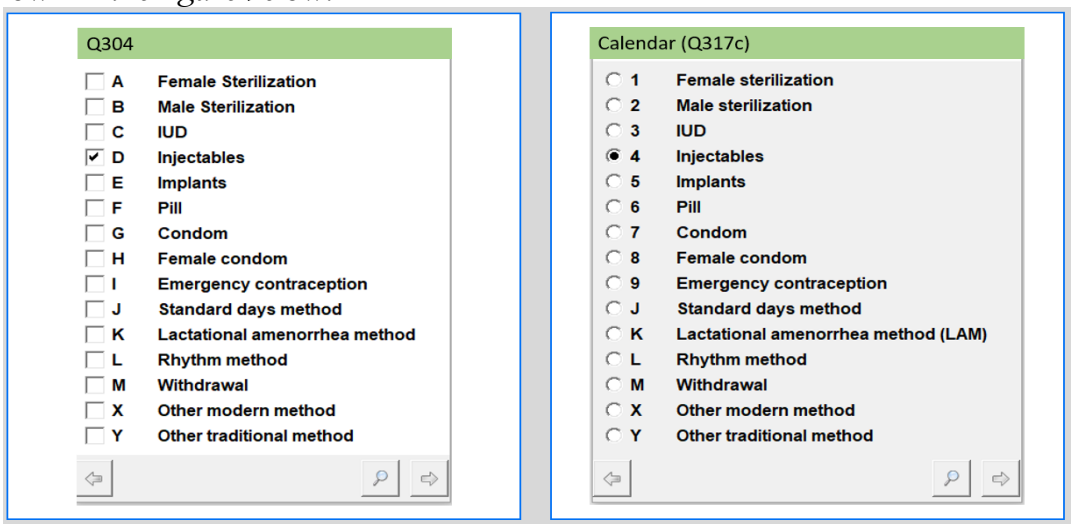
- **Current pregnancy:** Q232 asks about the respondent's current pregnancy status. If the respondent is pregnant, Q233 captures the number of weeks or months of pregnancy. If the respondent is currently pregnant (Q232 ="yes"), the system fills the calendar with a P in the month of interview and preceded with as many Ps as the declared duration of pregnancy minus one. In other words, the total number of months recorded with 'P' for the current pregnancy is the same as the number recorded in Q233.



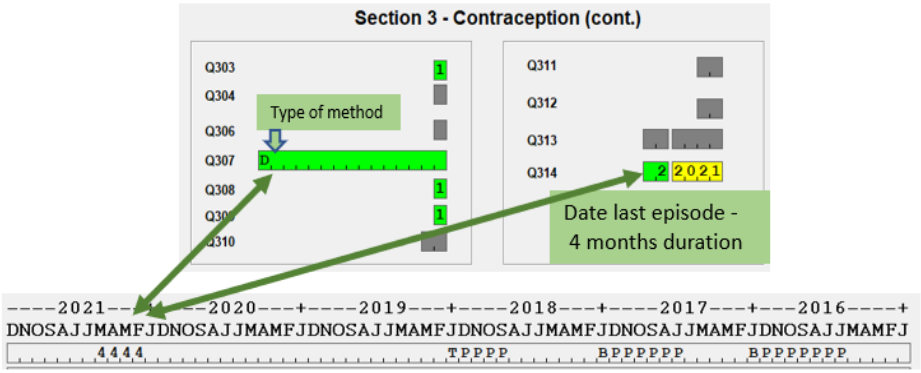
- **Current contraceptive use:** This is the last segment where information in the calendar can be filled using direct questions from the questionnaire. Current use and current pregnancy are mutually exclusive. According to the skips in the questionnaire, if the respondent is pregnant the current use of contraception questions are skipped.

  Questions 303-314 ask about current use, type of method used and the date when the most recent episode of use started without stopping. The screen below shows that the respondent is currently using **(Q303=1) "D = Injectables"** and that she started using pills continuously since **Q314=2/2021**.

Note: The contraceptive codes used to fill the calendar are different from the codes in Q307 as shown in the figure below:



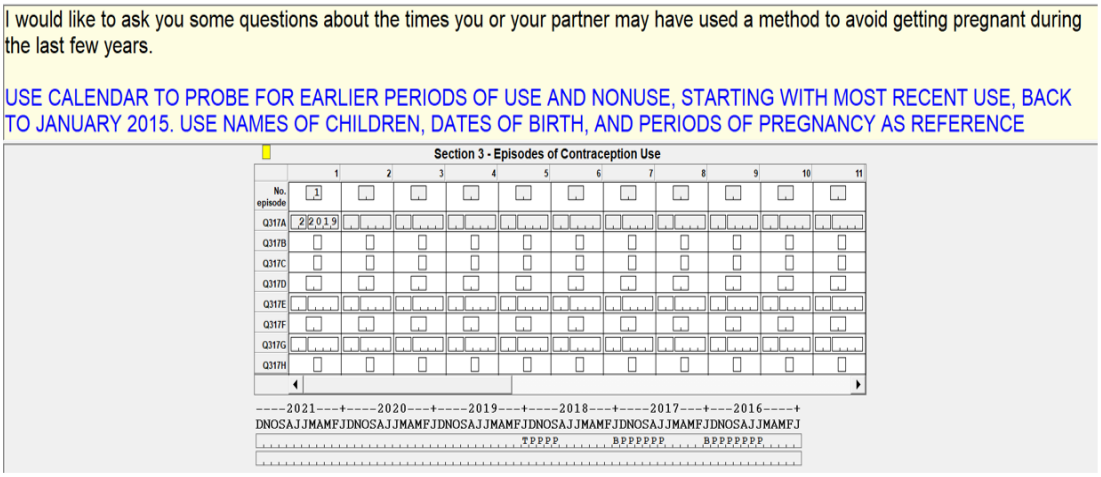
The system places in the calendar the equivalent contraceptive code for Q304 in each month, starting from the date given in Q314 to the date of interview. The calendar below shows code "4 = Injectables" that is the equivalent to code" D" in Q304.



3. Use of contraception in the calendar

- **Episodes of contraceptive use (filling the gaps): After** questions on current pregnancy and/or current use are recorded in the calendar, the system takes interviewers to a section to complete the calendar. This section collects information about the respondent's history of contraceptive use since the beginning of the calendar.

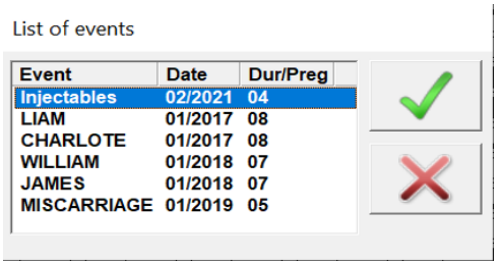
A screen is displayed with an introductory sentence explaining to the respondent the type of information about to be collected.



Next, the program asks to press any key (normally the advance or enter key). After pressing a key, a show box with all the events that are already recorded in the calendar (birth dates, names, pregnancies, pregnancy losses, current use), is displayed.

The box specifies the name of the event, the date, and the duration.

The figure shows 6 events for this respondent:



(1) She is currently using **Injectables** since 02/2021 and the duration of use = 04 months,
(2) She's had **4 live births** (2 pairs of twins) in the last 6 years: "**Liam and Charlote**" and "**William and James**",
(3) She had **a termination** in 01/2019 that ended in a miscarriage and had a pregnancy duration of 5 months.

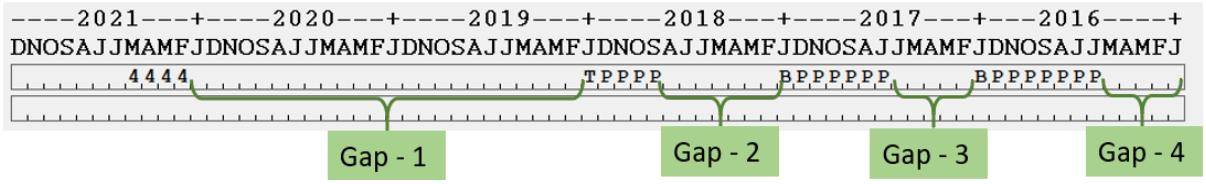
The list of events will help as a reference point for yourself and the respondent. FOR EACH PERIOD OF TIME IN THE CALENDAR THAT IS STILL EMPTY (NO 'B', 'P', T' OR CONTRACEPTIVE METHOD CODE), IT IS NECESSARY TO ENTER A CODE THAT REFLECTS THE RESPONDENT'S CONTRACEPTIVE STORY (see below the empty gaps marked in blue)

History of Use of methods

In this section the interviewer will ask a series of questions to fill in the gaps in the calendar, in between the events already recorded by the system. The events already collected are:

1. Births and terminations of pregnancies, including months of gestation
2. Current pregnancy (if respondent is pregnant)
3. Current use of method and date began using that method, if respondent is currently using a method

The CAPI system automatically identifies the gaps between these known events starting from the month of interview all the way down to the beginning of the calendar. Once a gap is identified the system asks questions related to the use of contraception in the gap.



The CAPI system will construct the questions using information it already knows about the beginning and end events for each gap.

For example, in gap 1 shown above, the start event is a miscarriage in January 2019 and the end event is the beginning of use of injectables in February 2021. For this gap, the CAPI system will ask a series of questions as follows:

- **Question 1**: The system customizes the question as follows:

317B. Between the time when the MISCARRIAGE ended in January 2019 and when you started to use the Injectables in February 2021, did you or your partner use any method of contraception?

317C. Which method was that?

Question 2: If the answer to the previous question is "yes", the system shows the list of contraceptives methods. Interviewers select the method declared by the respondent. In this example, the respondent declared that she was using Implants.

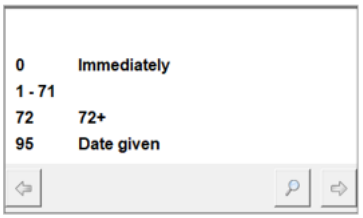
- **Question 3**: The next question is intended to find out when the respondent started to use the method declared. The application shows a drop-box window with different categories (see figure below).

317D. How many months after the time when the MISCARRIAGE ended in January 2019 did you start to use the Injectables?

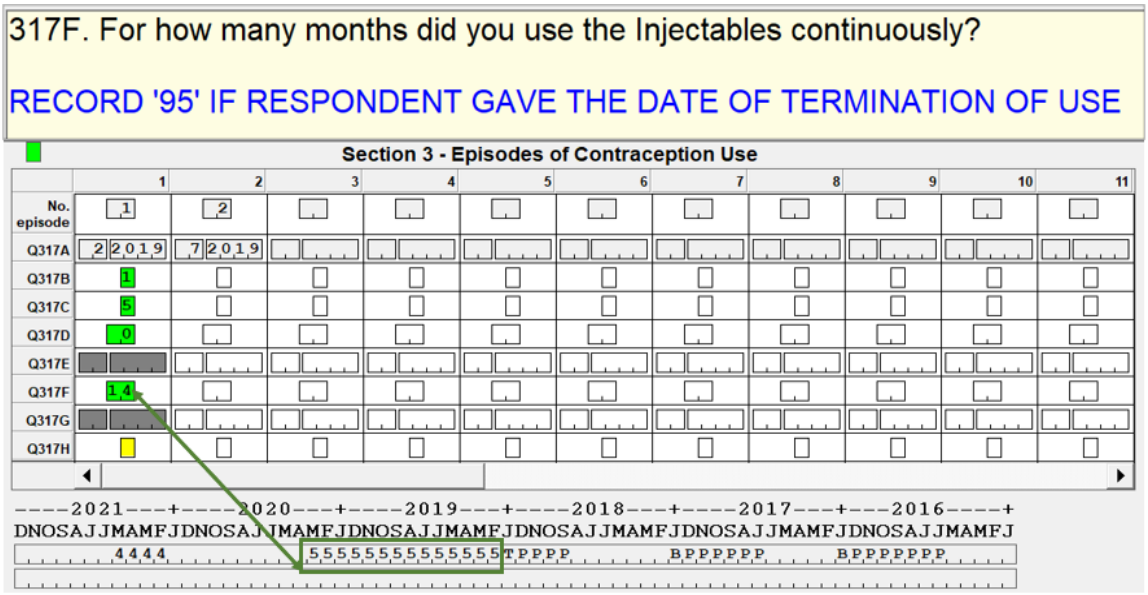
RECORD '95' IF THE RESPONDENT SAYS THE DATE OF STARTING TO USE THE METHOD.

1. Select **"0 immediately"** if the respondent started to use right after the miscarriage; or

2. Use the keyboard to enter the number of months (after the birth) that she wasn't using;
3. If the respondent gives a date, select "95". The cursor then moves to a field to enter the month and year when she started to use after the birth.

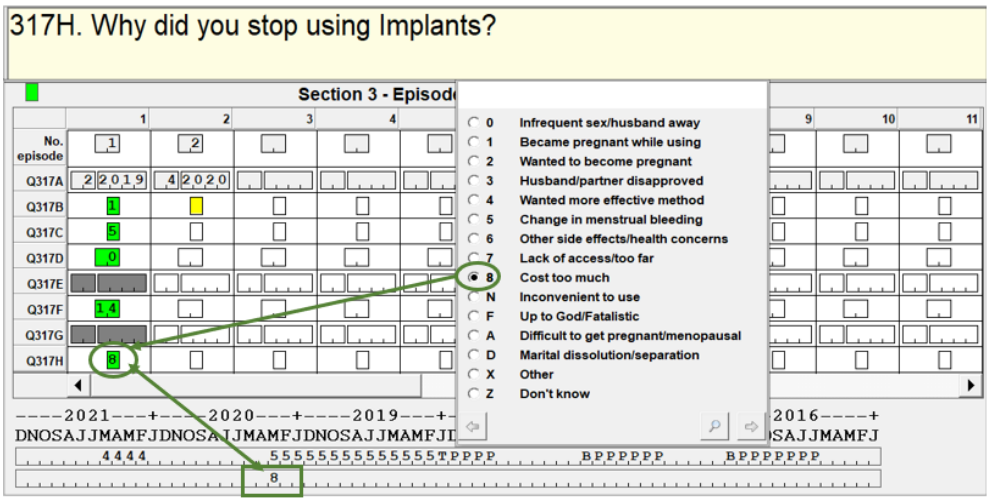


- **Question 4:** The next question (Q317F) is intended to determine the duration of the episode of use. The system already knows the length of the gap in months and therefore only allows a duration of use that is less than or equal to the length of the gap. After verifying that duration of use does not exceed the gap, the response to this question is used to complete the entries in the calendar. In this example, the CAPI system records code 5 (implants) for each month in the gap period.



- **Question 5:** The reason for discontinuation of use is asked every time a method being used is stopped. Every episode of contraceptive use in the calendar except for the current method should have a reason for discontinuation. The example above shows that the respondent used Implants for 14 months and then stopped using. In this case a reason for discontinuation must be obtained from the respondent.

  When the cursor reaches question Q317H on reason for discontinuation, read the question to the respondent and select the answer from the list. The CAPI system will place the response selected in the second column in the calendar, just under the last month of use of the method, as shown below.



The figure above shows that the respondent used Implants for four months, however the gap to be filled is 8 months long. Since the gap was not filled completely, the CAPI system now generates a new series of questions about the new gap between the month the respondent stopped using implants and the beginning of use of pills. The application then repeats questions 1 to 5 for this new generated gap.

The CAPI system continues in a similar way until each gap in the Calendar is filled as described for questions 1 to 5 in this section. If the respondent is not using any method, the system will fill the gap with zeros "0" and move to the next gap. After answering all relevant questions for each gap in the calendar, ***every row in the first column of the calendar up to the month of interview should be filled.***

Exceeding the maximum duration of episodes

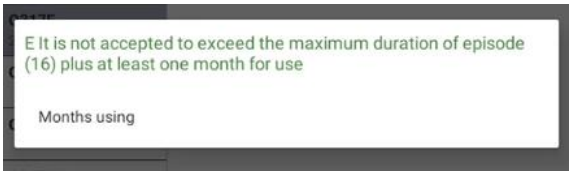
For each gap between events, the months of contraceptive use in that gap reported by the respondent, plus any time they waited before starting to use the method, cannot exceed the number of months in the gap in question.

For example, there are 26 months in a gap beginning in October 2020 and ending in December 2022. If the respondent reports she used a method in this period, the sum of the waiting period (if any) between the start of the gap, and the duration of method use, must be less than or equal to 26 months.

If the respondent says she waited 6 months before starting to use, and used for 10 months, the sum of the two is 16 months. The period of use+waiting time is within the maximum period of 26 months. In this case the CAPI system will generate a new gap between the end of the 10 months of method use and December 2022 and ask a new series of questions for this gap.

If the respondent says she waited for 10 months and used for 16 months, the use+waiting time is exactly equal to 26 months. In this case the gap is filled so the CAPI system will move on to the next gap (if any).

If, however, the respondent in this example reports waiting for 10 months but used for 18 months, the use+waiting time is equal to 28 months which exceeds the duration of the gap. In this case the system will generate an error message as shown below:



To resolve this message, carefully probe determining the correct period of waiting plus duration of use for the gap in question. Remember that the question about months of use refers to **continuous** use.

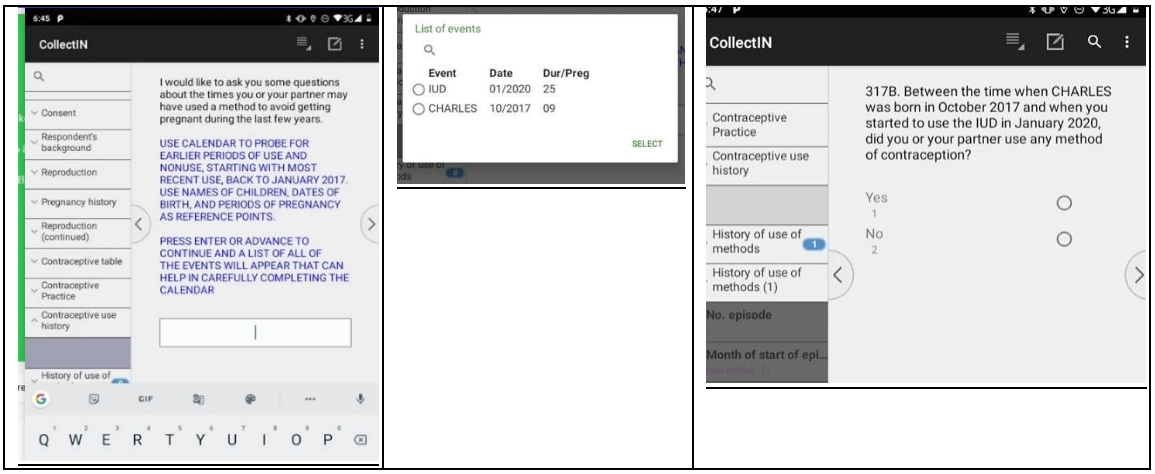
Entering the Calendar on Android Devices

The process for entering the calendar on Android devices is the same as that described above, with two main differences:

1. Questions in the Android interface are presented one by one, and not in a table form as in the CSPro Windows interface.
2. Instead of a horizontal field on the form showing the filled calendar months, on Android devices the same information is available as a vertical table. The table is accessed by using the CAPI toolbar and then selecting the “Calendar” option.

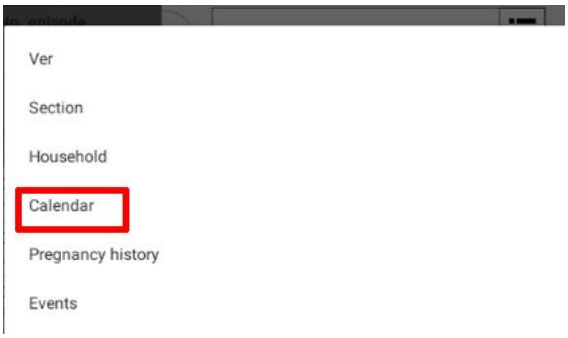
1. Examples of calendar questions in the CAPI interface

Below are shown examples of the beginning of one set of questions in the History of Use of Methods section in the Android interface

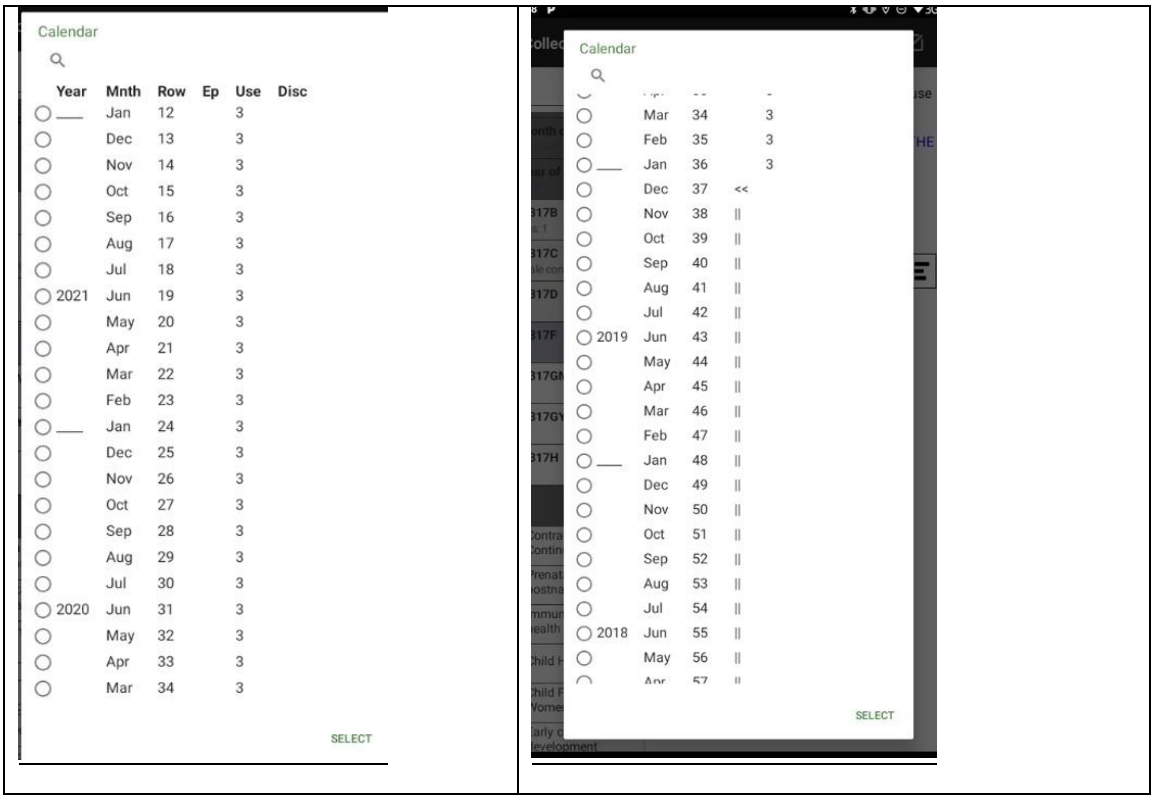


2. Displaying a visual representation of the calendar in the Android Interface

To display a visual representation of the calendar in Android, first click on the CAPI toolbar, then select "Calendar".



The system will then display a table as shown below. Note that the table is so long it cannot be displayed in its entirety on the screen so the user must scroll to see all the months of the calendar period. The images below show the table as it is scrolled.



The calendar table display has six columns as follows:

Title	Description
Year	Year of row
Mnth	Month of row
Row	Number of row in calendar
Ep	Indicates the current gap or episode being asked about, if the calendar option is used when entering the History of use of methods section
Use	Use of method or event
Disc	Code for discontinuation

The calendar display provides a useful visual guide to the current state of the calendar based on events filled automatically by the CAPI system such as pregnancies and use of methods from the history of methods section. It should be used by the interviewer where needed to keep track of episodes in the calendar.

Note that only months from the beginning of the calendar in January 2017 up to and including the month of interview are shown. In the above example, all months up to January 2022 are shown.

6.3 Entering the vaccination card for a child

In this section the interviewer will collect information only for living children born in the last three years. An introductory statement about vaccination will be displayed.

502. Now I would like to ask some questions about vaccinations received by your children born in the last 3 three years. (We will talk about each separately, starting with the youngest.)

(After reading, click Enter or the advance button to continue)

If there is more than one child eligible for this section, the system will list the children starting from the youngest and then repeat the section on the next living child.

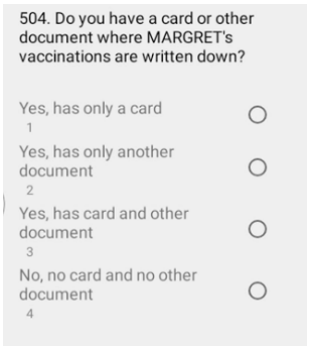
The interviewer should have obtained documentation (birth certificates and vaccination (health) cards or booklets) for eligible children at the beginning of the interview. If vaccination (health) cards have not already been collected, this is the right moment to ask the respondent to look for the card(s).

Health card vs mother recall

The MDHS questionnaire collects vaccination information from two main sources: a) from health card/document (question Q509-Q512) and from mother's recall (Q513-Q528). These two sources are mutually exclusive, meaning that if there is a vaccination card, question about mother's recall will be skipped and vice versa. Question 504 and 507 determine which set of questions will be skipped. It is critical to obtain written documentation of the vaccination history for all eligible children, be patient if the respondent needs to search for the card(s) or other documentation.

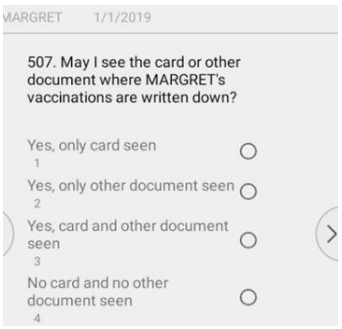
Question Q504

If the respondent has a vaccination card for the child and no other document where vaccinations are recorded, select **"1- YES, HAS ONLY A CARD"**. If the respondent has a document where vaccinations are recorded but not a card, select "**2- YES, HAS ONLY ANOTHER DOCUMENT**". If the respondent has both a card and another document, record "**3-YES, HAS A CARD AND OTHER DOCUMENT**". If the respondent has neither a card nor any other documents indicating the vaccinations the child has received, select "**4- NO, NO CARD AND NO OTHER DOCUMENT**".



Question Q507

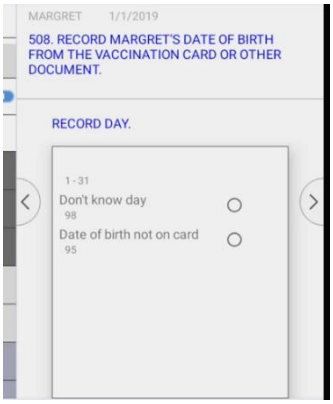
This question is asked only if the respondent's child has a vaccination card or other document (Q504 = 1, 2 or 3). If the respondent shows you a card and no other documentation, select "**1~ YES, ONLY CARD SEEN**". If respondent does not show you a card, but does show you another document, select "**2~YES, ONLY OTHER DOCUMENT SEEN**". If respondent shows you both a card and another document, select "**3~YES, CARD AND OTHER DOCUMENT SEEN**". If the respondent is unable to show the child's card or other document because someone else has it or it is not accessible during the interview, select "4~ NO CARD AND NO OTHER DOCUMENT SEEN". By selecting category 4, the system will skip to questions Q513 to start collecting information from mother's recall.



Note: in some cases, respondents may not have vaccination (health) cards for their child but may have a notebook or other document in which this information is recorded. Alternatively, they may have a notebook in addition to a vaccination (health) card. Be sure to ask the respondent to look for these other documents too.

Date of birth (question 508)

Copy the child's date of birth (day, month, and year) as it is written in the document you obtained in question 508. If the child's date of birth is not written on the document, click on the three horizontal bars at the right-hand side of the day field and select code "**95~ Date of birth not on card**".

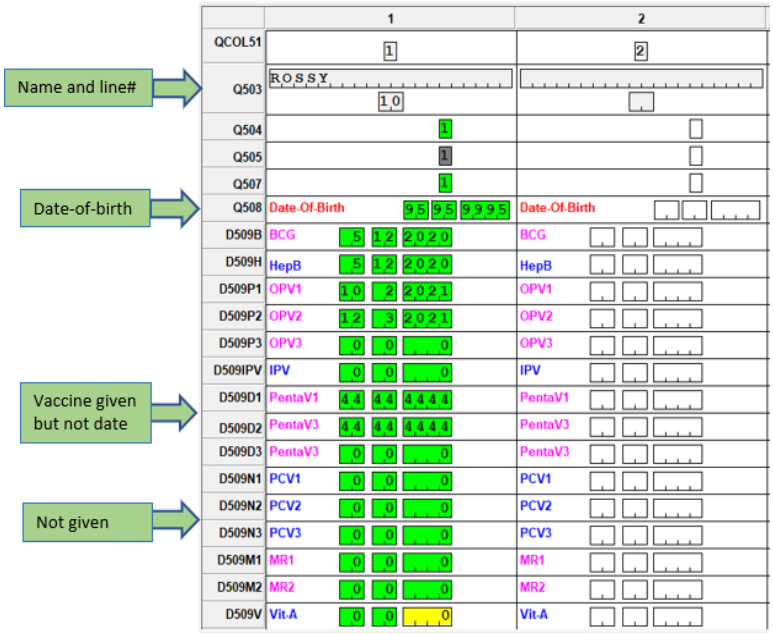


DO NOT COPY THE CHILD'S DATE OF BIRTH FROM THE PREGNANCY HISTORY AND DO NOT ASK THE RESPONDENT FOR THE CHILD'S DATE OF BIRTH.

Recording vaccine's date from card

Vaccination's dates information should be filled into the CAPI system directly from the card. When there is more than one eligible child for this section, be certain to match the correct card with the child you are asking about.

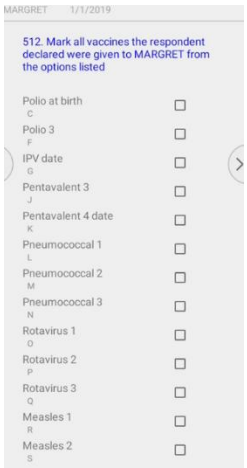
- Before entering dates from the card, examine the card carefully. The card may list the vaccinations in a different order than the questionnaire.
- Dates should be recorded with the day first, then the month and then the year.
- Check the card, sometimes the month might come first, followed by the day and year.
- Be very careful not to record a scheduled appointment date as a vaccination date (Some health facilities may also record the appointment's dates for the next vaccination). Only record dates that vaccinations were given and not dates of appointments.
- Use "98-Don't Know" if the card shows that a vaccine was given but there are some parts missing.
- If the card shows clear evidence that a vaccination was given, but there is no date recorded, record '44' in the DAY column next to the vaccine and leave the month and year blank; the system add code "44" to the MONTH and code "4444" to the YEAR.
- If there are no date and no check mark next to a specific vaccine, record '00' in the DAY column next to the vaccine and leave the m55onth and year blank; the system will automatically fill the month and year fields with zeros and will then move to the next vaccination.



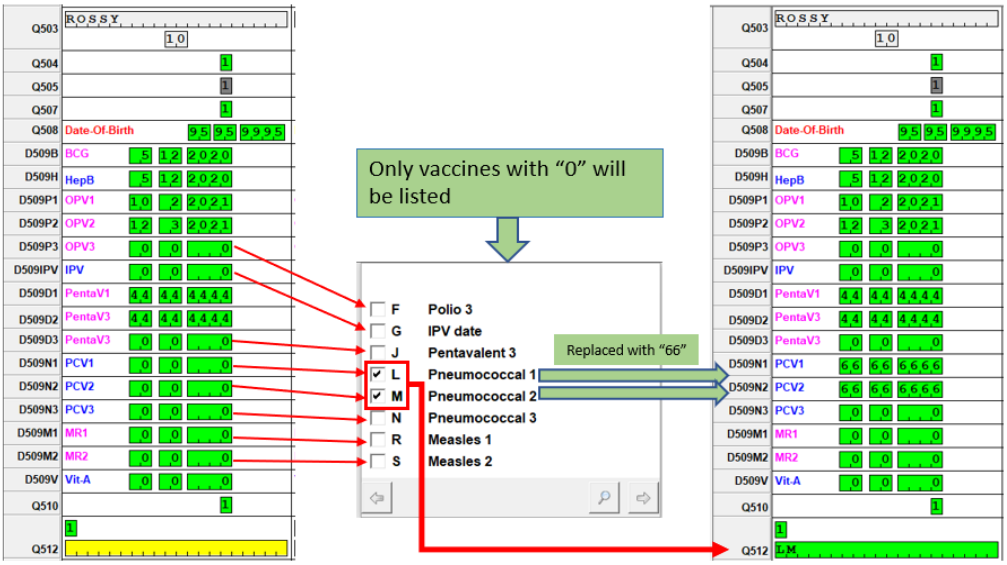
Adding any other vaccine not recorded in the card (Q512).

Question Q512 is used to probe for any vaccination that the child received but there is no record on the health card. This includes vaccinations given in national immunization campaigns or child health days. The system will display the question "whether the child received any vaccinations that are not recorded on the card".

If the mother reports that the child did receive a vaccination for which no date was recorded on the card, record "1-YES" in Q512 and the system will display an alpha variable with the list of vaccines that were recorded as no received ("0" values).



From the options listed, mark all vaccines the respondent mentioned as given to the child and click ENTER. The system will replace the '00' for that vaccination with a '66' in the DAY, "66" in the MONTH, and "6666" in the YEAR next to the vaccine received and will skip to Q529. In the example below, based on information provided by the respondent, you learn that Rossy also received PCV1 and PCV2. After this information is marked in the alpha list, the '00' that had been in the date for PCV1 and PCV2 are replaced with code '66'.



Note: only record "1-YES" in Q512, if the respondent lists one (or more than one) of the vaccinations that were recorded with "00" in Q509. Do not include vaccinations that are not listed on the vaccination card, such as an influenza (flu) vaccination. The mother may tell you that the child did not receive any vaccinations other than those recorded on the card.

Vaccination from mother's recall

The set of questions Q513-Q528 are for children with NO card and no other document. This is the last attempt to get information about the child's vaccination coverture. In this section you will ask about whether the child received any vaccinations, including vaccinations received in campaigns or immunization days or Child Health Day (Q513). If the response is "1-YES", the system will continue asking if the child received each of the vaccines listed in Q509; if the answer is "2-NO" the system will end this section.

Since Q513 is a critical question, read the whole sentence before accepting the woman's response.

6.3 Child and Woman Feeding section

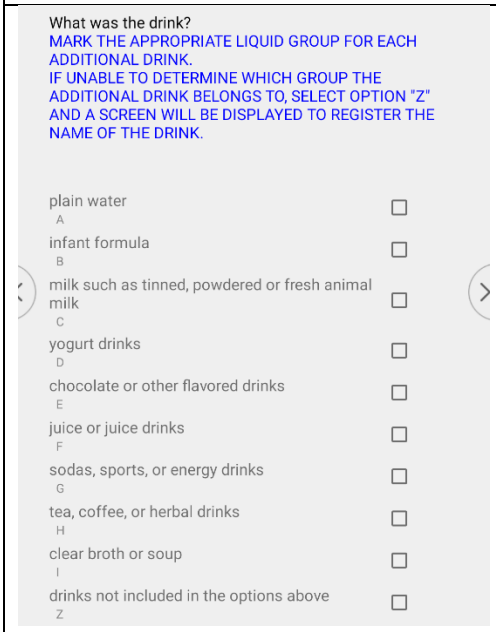
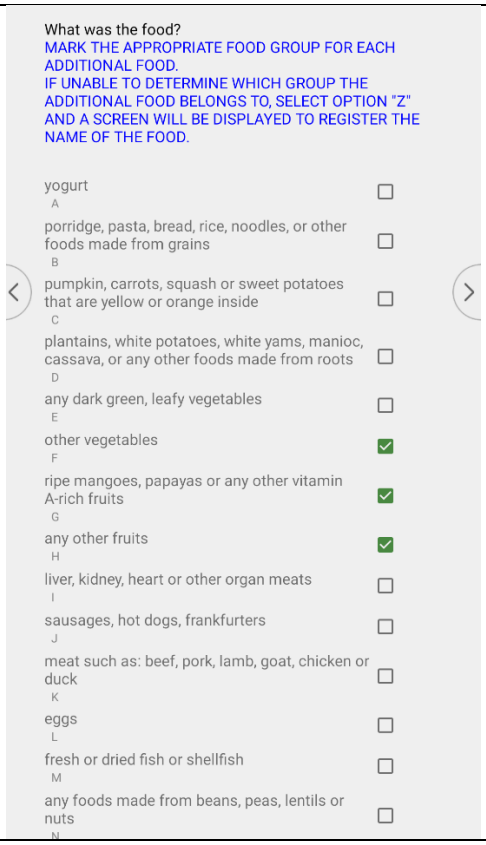
In this section the interviewer asks for information on the drinks and foods the child and the mother consumed the previous day and night. The information is obtained by going first through a list of different kinds of liquids consumed in the previous 24 hours. The interviewer then proceeds to ask about different kinds of foods, again by asking a series of yes/no questions about specific foods.

Often, we find that in practice, when the interviewer begins to ask the series of questions about drinks or foods, the respondent will start describing other foods or drinks taken in addition to the one being asked about. To allow this information to be captured easily, the CAPI system allows the interviewer to pull up a list of all drinks or foods at any time during the series of feeding questions. This list is used to record any responses regarding foods and drinks regardless of the current question being asked.

The feeding list is accessed by clicking on the CAPI toolbar and then selecting the option "Foods and drinks", then select "Yes" at the prompt to display the list.


Ver
Section
Household
Pregnancies
Foods and drinks
Display food or drink categories
Yes
No

The list displayed will differ depending on whether the interviewer is asking about liquids or foods at the time when they pull up the list.

Drinks list	Foods list
	

The list will show all types of drinks and foods that are being asked about in the questionnaire. To record an item as being consumed, the interviewer checks the box next to the item. Once all items have been recorded, click on the ">" advance button to move from the list back to the specific questions.

Note that if an item is checked using the pull up list, the CAPI system will automatically complete the specific question for that item with a "Yes" response. The question will still appear as the interviewer works through the list of questions, however, the question does not need to be asked again if the response was recorded.

6.4 End of Individual Woman's Questionnaire

When reaching the end of an individual questionnaire the program will register the time at the end of the interview and presents a screen with a blank field with the title "Handler to finalize interview." Steps for finalizing the individual interview as those used for the household interview.

- Click the  "Advance" button to continue. If in add mode, the application proceeds with the actions described in the next two bullets. If in modify mode the application returns to the main menu.
- The application then presents a box for entering any notes the interviewer wants to make. Type in the box any notes relevant to the interview that you think are important. To complete the interview, click the "OK" button.

- The program then shows a menu with two options "Review Interview" and "Finalize Interview". To go back to the interview, you have completed (for example, to make corrections), click "Review" otherwise click "Finalize" to save the interview and return to the Interviewer main menu.

8. LIST QUESTIONNAIRES IN THE CLUSTER

This option presents a report of households and individuals that have been visited by the interviewer in the cluster. The status report is useful to know the status of each household visited by the interviewer and it also helps to identify problems later when the cluster is closed by the supervisor.

To produce this report, from the main menu select option **5-List questionnaires in the cluster.** The system will generate a report like that shown below. To exit the report and return to the main menu, click the Android back button.

Status for cluster: 0001

Household and Individual Interviews collected from assigned households

HH	Name	Result	Visits	Biomarkers
0019	21 HEGAN STREET	1-Complete	1	01-00!
02	W-MARGRET OTIENO	1-Partial	5	
0024	22 HEGAN STREET	1-Complete	3	02-00!
02	W-AISSATOU MANNEH	Not visited		
0083	69 DOBSEN STREET	5 Refused	1	

Individual Interviews collected from shared households

HH	Name	Result	Visits
0014			
01	F-ABDOU FAAL	1-Partial	1
02	M-MME FAAL	1-Partial	1

The status report first displays one line for every household assigned to the interviewer for which any interview has been started. Under the line for the household the report lists the eligible

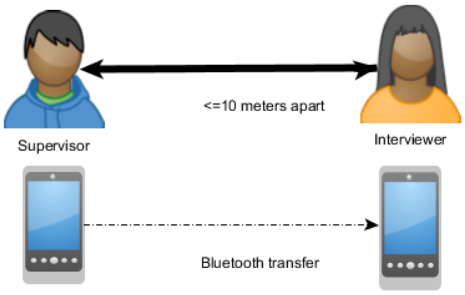
individuals in that household, together with the status or result of the data collection for each individual. The status report for households assigned to the interviewer also displays for each household the number of individuals eligible for biomarkers, followed by the number of individuals for which the data have been entered. If entries for all eligible members have been entered the report will show a "✓" symbol. If not all eligible members have had biomarker information entered the report will show a "!" symbol.

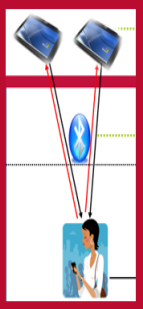
If the interviewer collected individual questionnaires for households received as shared households from other interviewers, they will be listed separately in an additional table in the report, as shown in the example above. Note that in this second table, in the line for the household, only the household number is shown, and other information such as name of head of household is not included.

9. DATA TRANSFER AND OTHER UTILITIES

9.1 Overview of Transfers

Bluetooth is used in the KMDHS to transfer data between tablets. The KMDHS system is designed to make the data transfer process quick and easy. All data transfers are carried out by choosing options on the menus of the interviewers and supervisors. Interviewers and supervisors do not need to select the files to be transferred; this will be done automatically by the KMDHS data collection system.

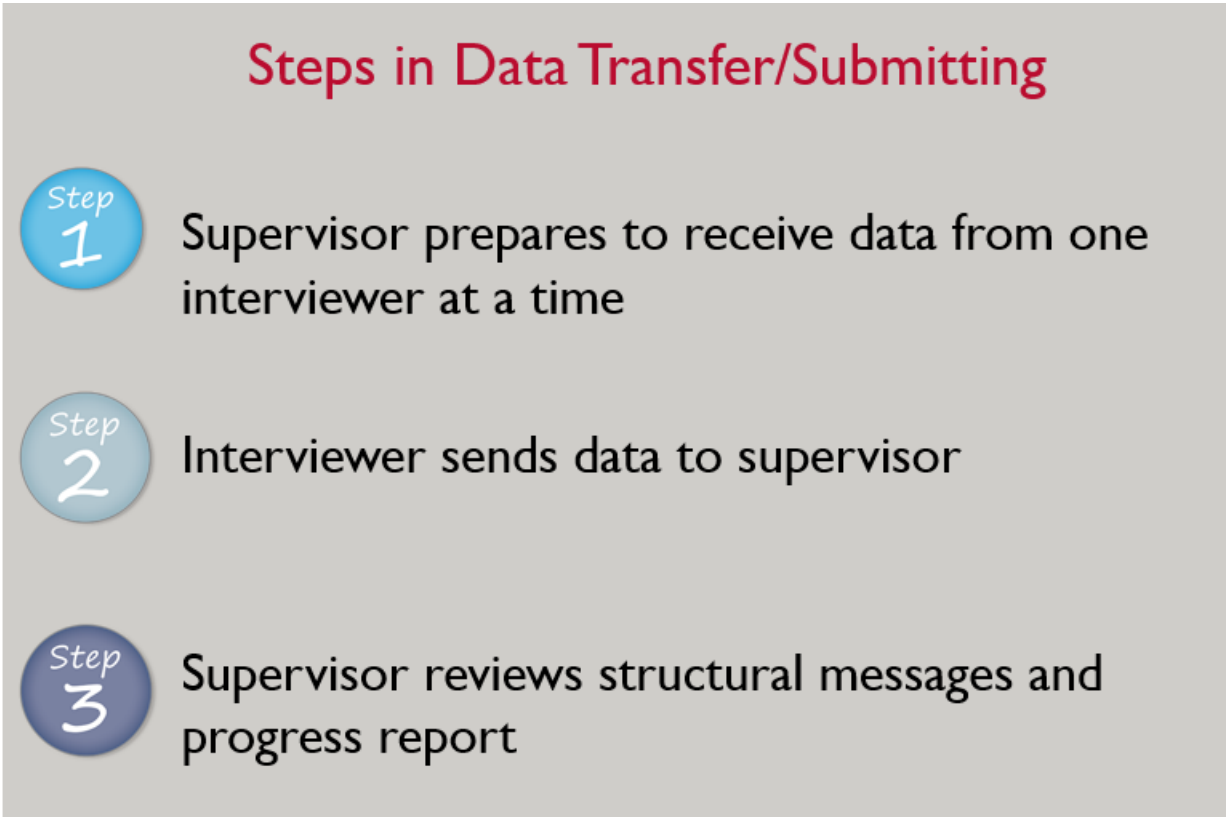




Data Transfer: Interviewer (sender) >> Bluetooth >> Supervisor (receiver) >> CSWeb >> Central Office

What? Why? When? Who? How?	
What?	• Submitting data to the supervisor
Why?	• Constantly backup data, check on progress
When?	• At least once per day (the more the better!)
Who?	• Supervisors, Interviewers
How?	• Bluetooth

The Bluetooth system is designed to allow transfer between tablets that are relatively close to one another. Normally, transfers will not work well if the tablets are more than 10 meters apart. When carrying out data transfers please make sure that the tablets are less than 10 meters apart to avoid any problems with the transfers.



- Only one interviewer at a time can send data to supervisor
- Bluetooth is not wifi – those connecting should be < 10 meters apart
- Supervisor must be in receive mode before interviewer begins sending
- Sender and receiver must co-ordinate so that they both begin the transfer process at about the same time
- Supervisor tablet will generate report of questionnaires begun or completed by interviewer
- **There is no need to manually pair devices to allow Bluetooth transfers in the CAPI system**
- Pairing is done automatically
- All that is needed is to manually set the Android Bluetooth ID to the interviewer/supervisor code **once**
- After this is set there are no further changes to Android settings needed

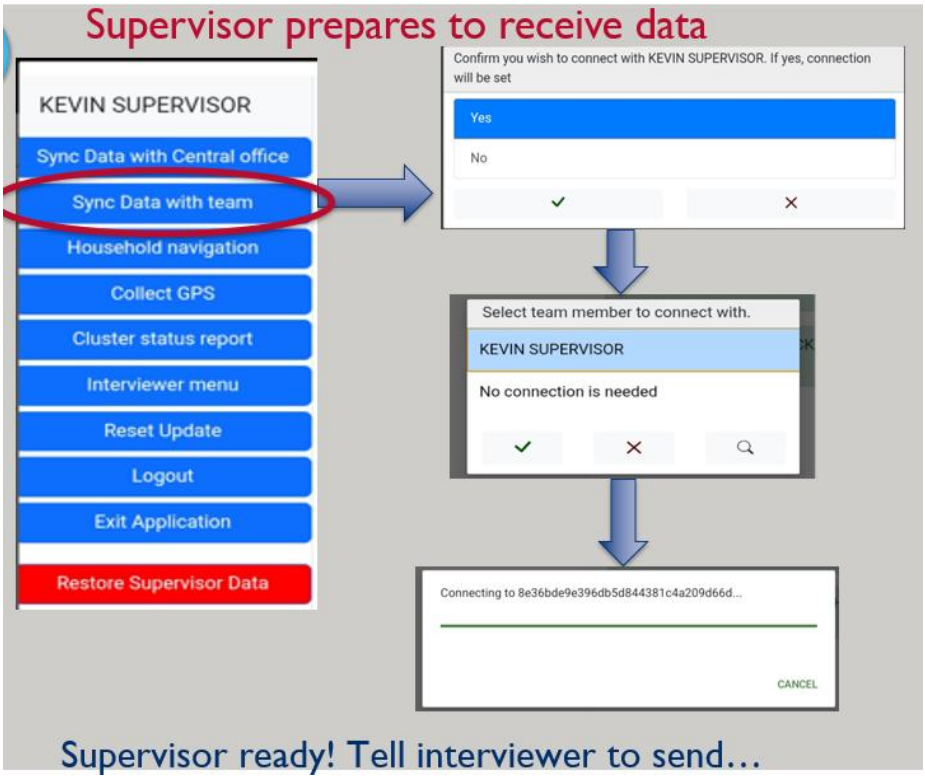
9.2 Transfers Menu

All data transfers between team members are done using Bluetooth. We will discuss them one by one.

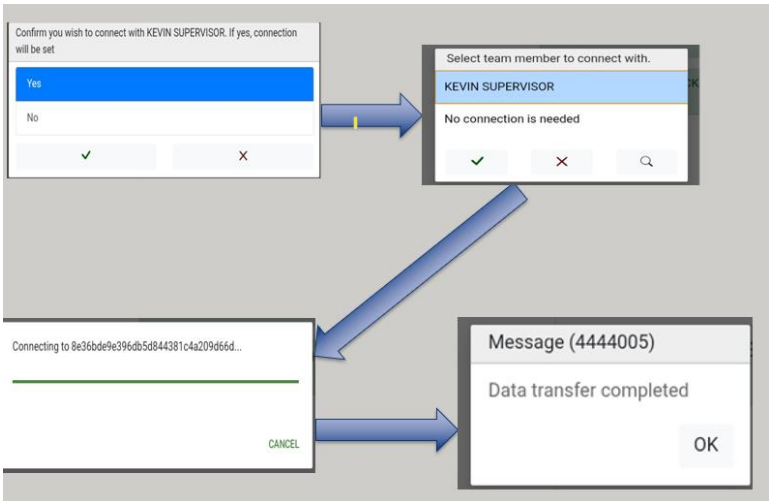
- Supervisor sends Household assignments to an interviewer.
- The interviewer sends Household and interviewer data to the supervisor

- Data is exchanged between interviewers to transfer the household questionnaire collected by a one interviewer to another interviewer, so that they can interview eligible members in the household.
- The supervisor sends an update for the KMDHS CAPI system to the interviewer.

To begin any data transfer activity you must first go into the Data Exchange menu by selecting option **7 "Data Exchange/other utilities"** from the main menu. The CAPI system will then display a list of data transfer options.



Supervisor is ready! Interviewers can watch! More eyes on each selection, the better



The table below summarizes the transfer menu options.

9.3 Receive Household Assignments from Supervisor

Interviewer (*sender*) >> **Bluetooth** >> Interviewer (*receiver*)

Note:

When the teams begin work in a cluster, the supervisor begins by assigning households to interviewers in the team by updating the electronic assignment form on the supervisor tablet. Once the supervisor has updated the assignment database, they then must transfer the assignment data to the team using Bluetooth.

Before they can begin interviews in a cluster, interviewers must receive the household assignments from the supervisor. The system wil not allow interviewers to begin an interview for a household unless that household has been assigned to that interviewer.

- Supervisor has electronic list of **selected** households from the household listing activity for each cluster
- Households are identified by number, name of head of household (obtained during listing), and optionally an address
- Household assignment is a means to organize and control the distribution of work within a cluster
    - Helps supervisor to share work equally among team members
    - Assign appropriate team members to households selected for male interview, anthropometry

- Household assignment gives **permission** to interviewer to begin household interview
- In the K-MDHS 2025 system, households must be assigned to an interviewer by the supervisor and transferred to the interviewer tablet
        - interviewers cannot self-assign
- This is to reduce possibility of duplicate cases
- Pay attention to household assignments
        - do not assign the same household to multiple interviewers

Steps in assigning households

Step 1 Supervisor assigns households on their tablet

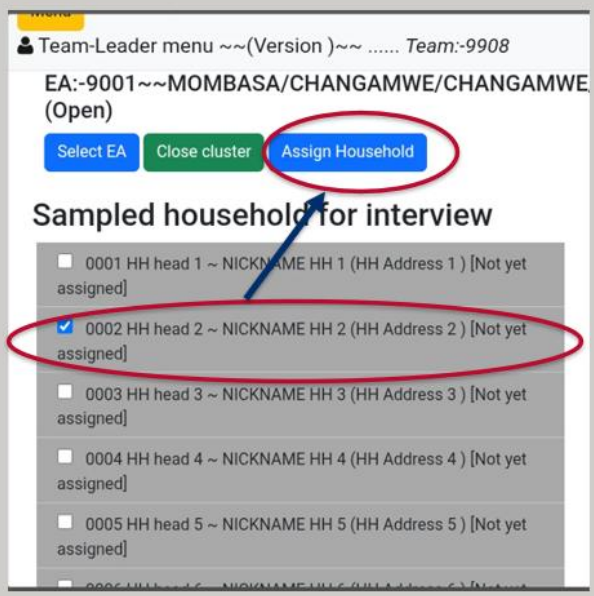
Step 2 Supervisors send household assignment to interviewers via Bluetooth Transfer

Step 3 Interviewers confirm assignment on their tablets

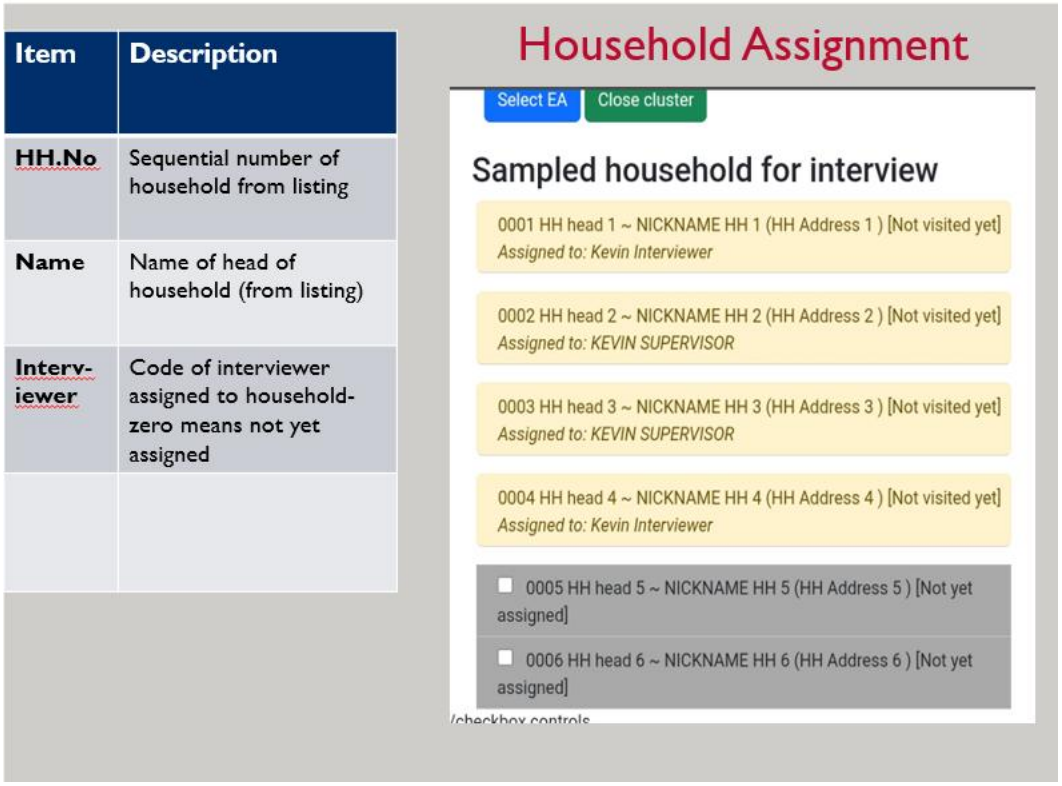
Step 1

Supervisor Assigns Households

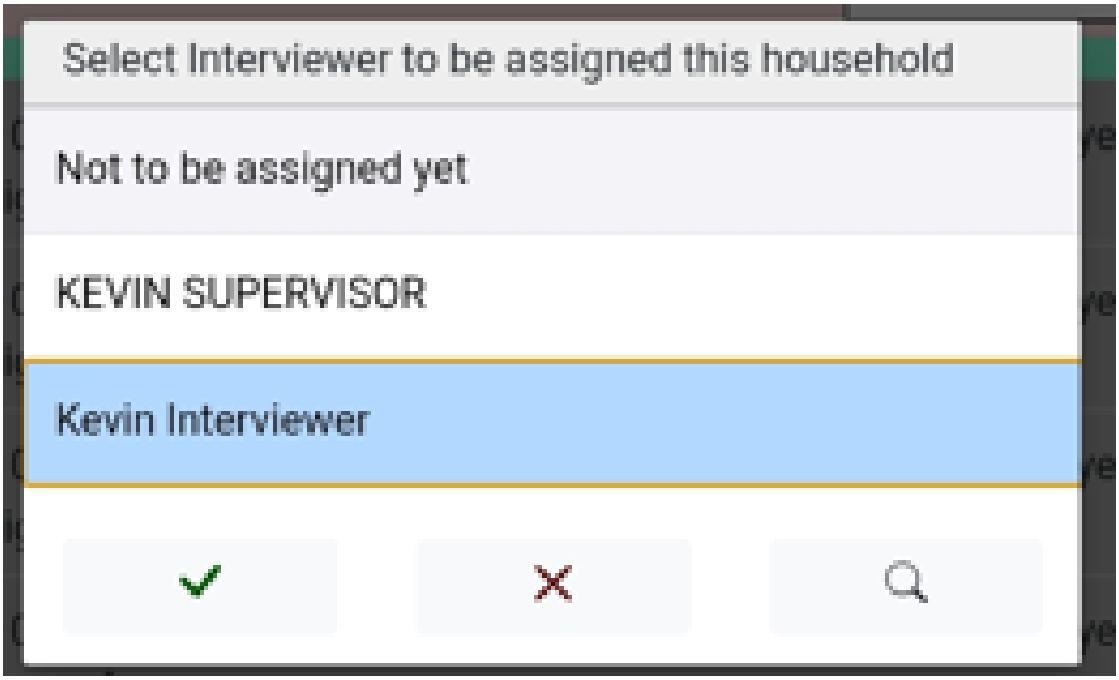
From supervisor main menu, select option 1 "Assign Households"

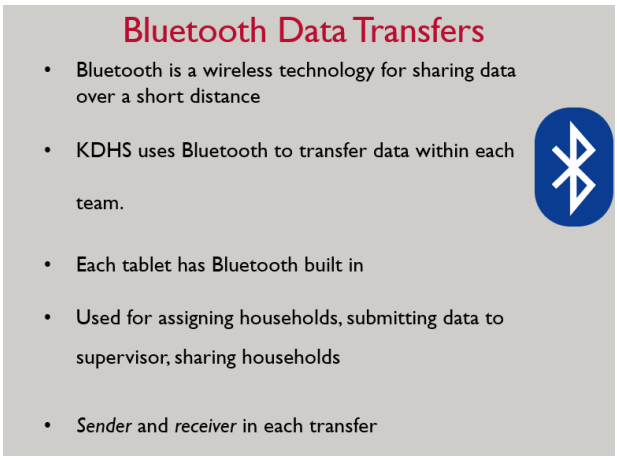


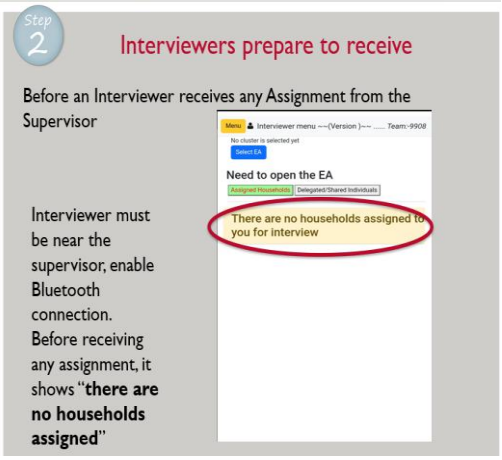
Item	Description
HH.No	Sequential number of household from listing
Name	Name of head of household (from listing)
Interv-iewer	Code of interviewer assigned to household- zero means not yet assigned

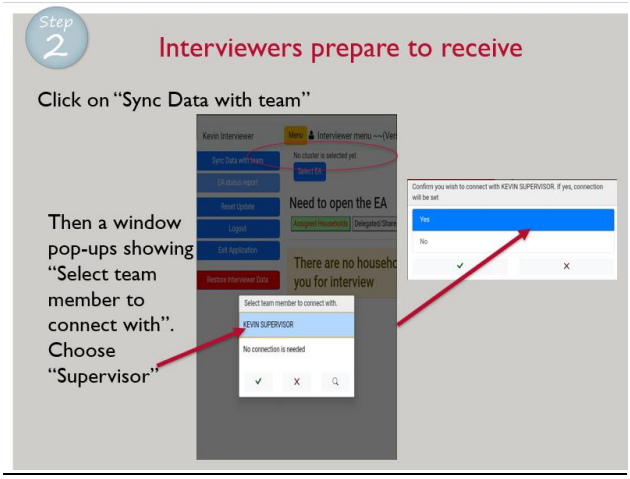


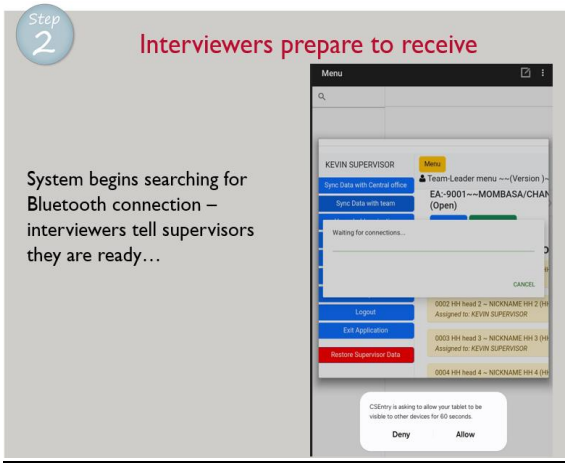
Note:
Cluster number must be correct; number of households in cluster depends on sample
Household numbers, Building numbers (structure), Addresses, Names, Result code, and currently assigned interviewer.
If interviewer should change, that can be done.

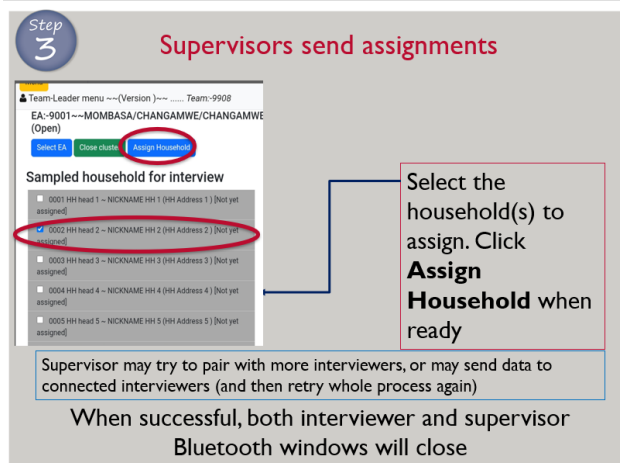


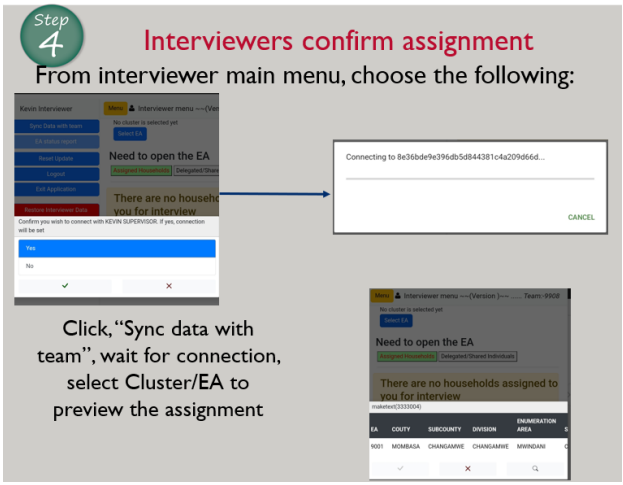












What three possible reasons are there for not pairing?

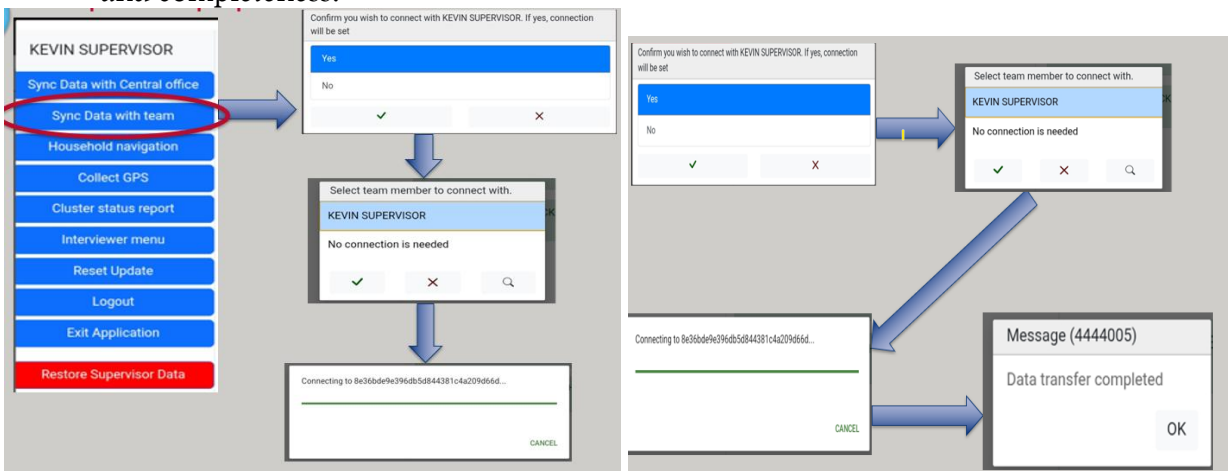
Answer – interviewers are not trying to receive assignment; or Bluetooth did not make connection (so troubleshoot – check if it's on, or try again); or interviewer was not listening/prepared to receive when supervisor started sending.

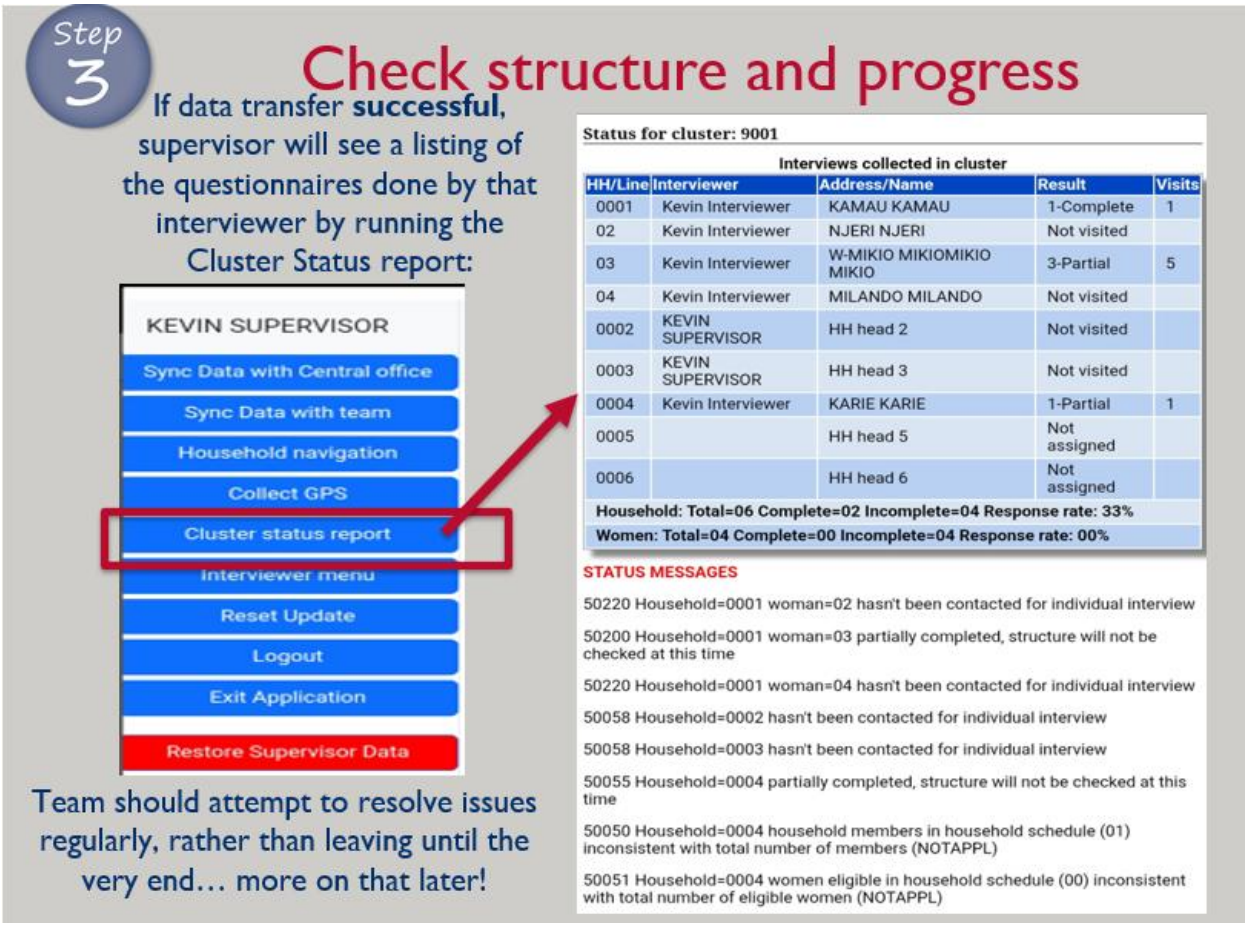
9.4.1 Overview

Interviewers must send the questionnaire data they collect to their supervisor at least once a day. Normally the best time to do this is every day in the evening after the interviews have been completed.

There are several reasons why this regular transfer is required, among them the most important are:

1. To safeguard the survey data with the supervisor in case the interviewer's machine breaks down, is lost or stolen.
2. To provide the supervisor with the most recent information on the progress of the team's work in the cluster. The supervisor is then able to determine household and individual are completed and what biomarker questionnaires have been entered. This information allows the supervisor to decide how to assign the remaining households to interviewers.
3. To allow supervisors to review the interviews received, in order to check their quality and completeness.





For now, this is just evidence that the transfer worked! We will work on resolving problems later….
Listing checks to see that what was supposed to be done was done, and what shouldn't be done, hasn't been done
Point out components of listing – cluster, interviewer number, result code, number of visits, biomarker done/not done, total numbers at bottom

9.5 Sharing Household Data with Another Interviewer

9.5.1 Overview

This option allows an interviewer to share their household data for the cluster with one or more interviewers in the same team. This is done to allow other interviewers to carry out individual interviews in that household. This may be needed for two reasons:

1. To allow interviewers to carry out interviews with individuals of the same gender. In the case of the KMDHS, this would apply to situations where male interviewers conducted the household interview and there are eligible women in the household. Eligible women must be interviewed by a female interviewer. In this case the male interviewer who did the household interview should share the household interview with one or more female interviewers on their team.
2. To speed up the work of carrying out individual interviews in a large household by dividing the individual interviews between two or more interviewers.

The option to share household data with another interviewer is accessed for both parties (the interviewer sending and the interviewer receiving) from the "Transfer and utilities" sub-menu. Only interviewers of the same team can share their data.

9.5.2 Steps to share household data among interviewers

9.5.2.1 Sending Shared Household Data

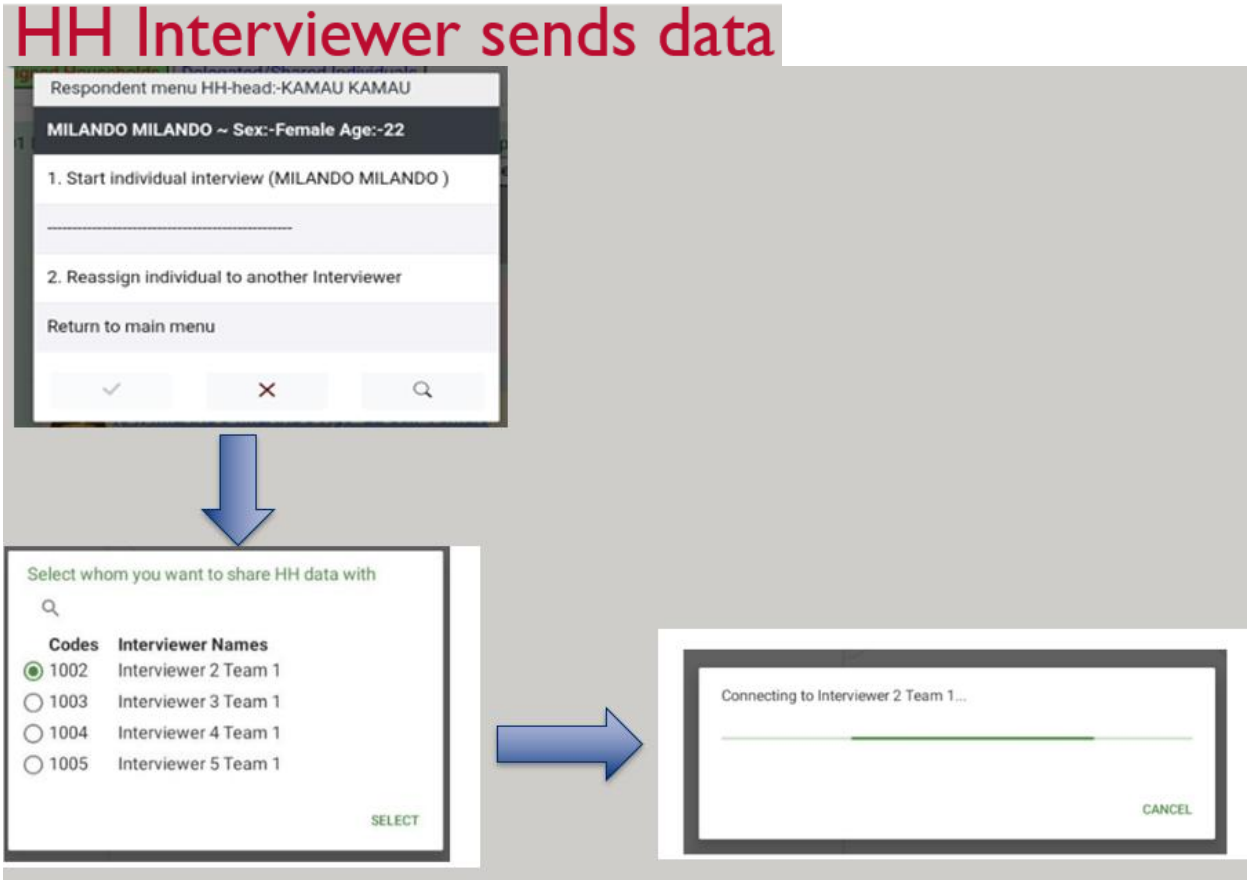
Interviewer (*sender*) >> **Bluetooth** >> Interviewer (*receiver*)

Reasons for household sharing

- Where household interviewers are different gender to some eligible individuals
  - Male interviewer did household questionnaire, will share household with a female interviewer so she can interview eligible women
  - female interviewer did household questionnaire, will share household with a male interviewer so he can interview eligible men
- Where household has many eligible individuals (men or women) and it is more efficient to divide up interviews among interviewers to ensure interviews are completed in a timely manner

Steps in sharing households

1. The supervisor and household interviewer identify the individuals (men or women) who need to be interviewed by other interviewer(s).
2. Other interviewer(s) prepare to receive data from interviewer of household.
3. Household interviewer sends data, other interviewer confirms.
4. Interviewers locate individuals and begin individual interviews



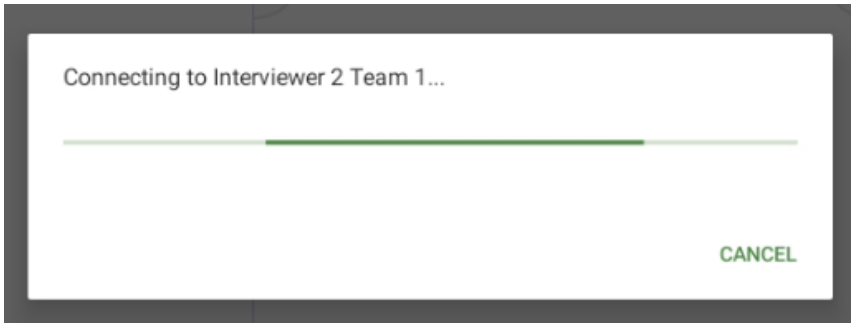
The steps to send household data to share with another interviewer are similar to those used to send data to the supervisor, with the additional step of selecting the interviewer who will receive the shared household data.

From main menu select option **Reassign Individual to another interviewer**

The system will display a list of all the interviewers who are in the team. Choose the interviewer you would like to send data to and then click on the "Select" button to begin sending data.



Once the receiving interviewer is selected the system will search for that interviewers tablet and send the data after connection.



9.5.2.2 Receiving Shared Household Data

The steps to receive shared household data are similar to those taken to receive household assignment from the supervisor.

The interviewer who is receiving the data follows these steps:

This will allow the sender to be able to find and send data via Bluetooth. Click "Allow" and then the tablet will await the connection.



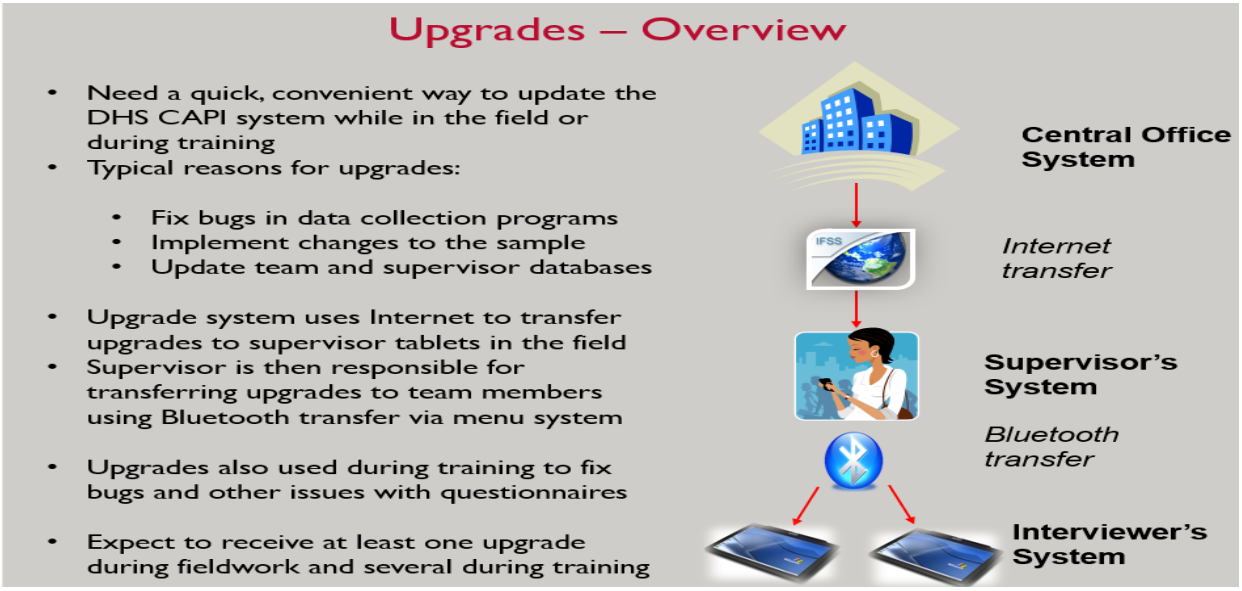
The data will be received, and it will automatically return to the main menu. Once the transfer is completed, the receiving interviewer should have access to eligible individuals in the household being shared. The receiving interviewer should check that the data has transferred to their tablet by looking at the eligible individuals.

Household interviews for shared households cannot be viewed or edited directly by the receiving interviewer. The purpose of sharing households is to allow the CAPI system of the receiving interviewer to determine which women or men in the household are eligible for individual interview.

9.6 Receiving System Updates from the Supervisor

It is necessary to have a mechanism to update the CAPI system while the fieldwork is in progress. There are times when applications or supporting data files need to be updated in the field. Applications may need to be updated to fix problems or for other unforeseen circumstances or events. Application supporting files (the ones described in the Introduction to CAPI elements) normally require updates for several reasons. For example, when a member of a team quits the job and a new one is hired. In this case the "Fieldwork personnel" file needs to be updated. Supervisors will receive updates via CSWeb. After updating their own tablet, they transfer the updates to the interviewers.

The process for receiving updates from the supervisor is like that of receiving household assignments. Updates can be transferred to several interviewers at the same time. To get the upgrades, follow these steps:



Steps to implement Upgrades

Step 1 — Supervisor receives upgrade automatically from Central Office

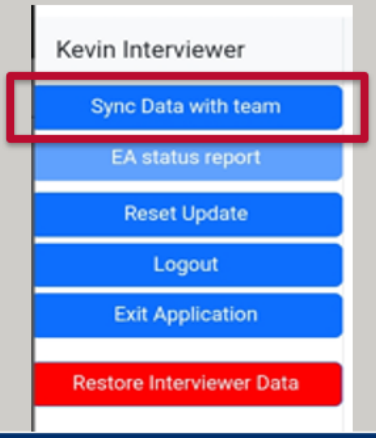
Step 2 — All interviewers prepare to receive upgrades

Step 3 — Supervisor sends upgrades

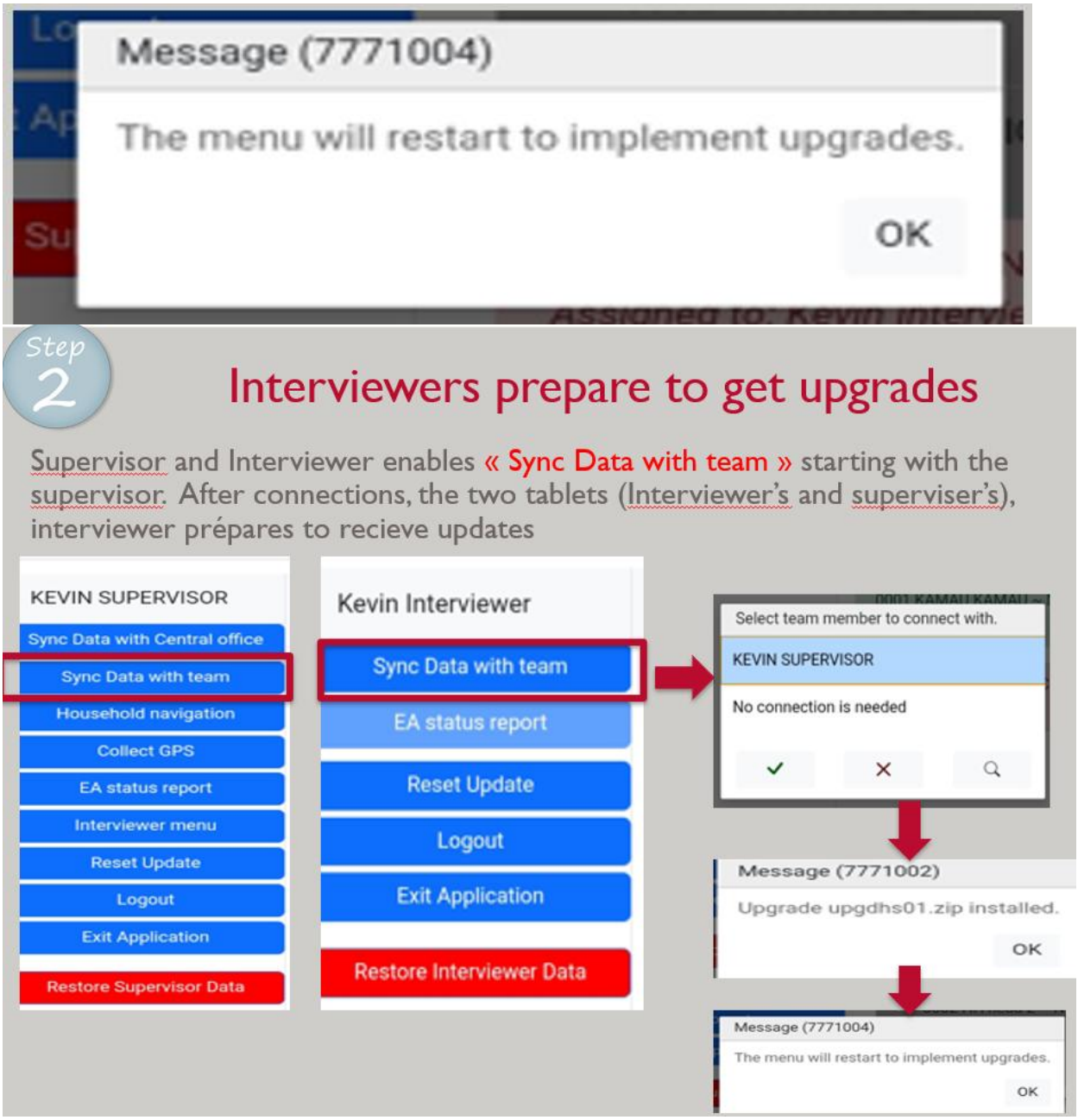
Step 4 — Team confirms upgrade and restarts menus

Transfer and Utilities Menu

All the activities listed below are domiciled in the same place. Enabling one, automatically trigger all other activities – "Syncing Data with team" enables all



Number	Activity	Description
1	Transfer cluster data to supervisor	Send all data collected by you in the cluster to the supervisor
2	Share HH data with other interviewer	Share data for a household with another interviewer
3	Receive HH data from other interviewer	Receive data for a household from another interviewer so you can carry out interviews for eligible individuals in that household
5	Receive system updates from supervisor	Receive updates of the KDHS system from your supervisor
6	Receive HH assignment from supervisor	Receive the data file containing household assignments to interviewers from supervisor



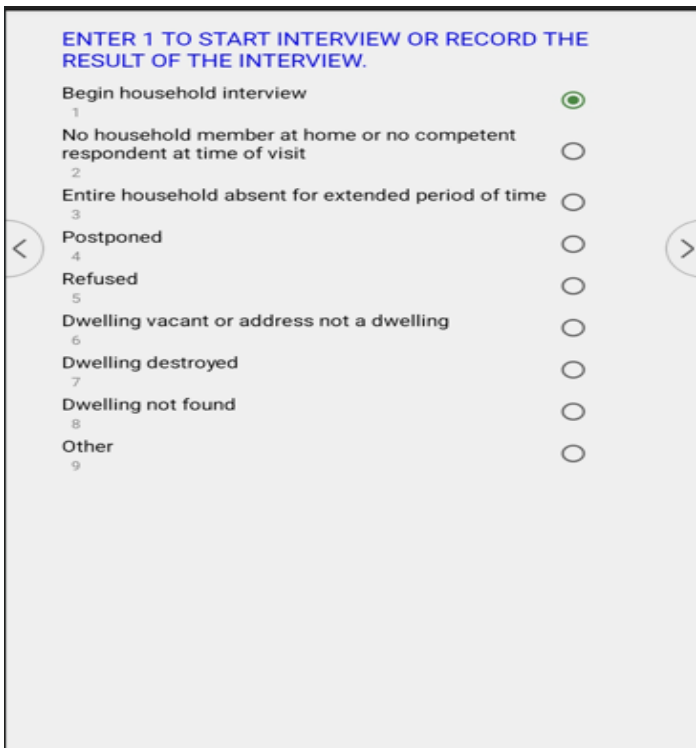
1. Ensure that the tablet is connected to the internet/Wi-Fi

After the installation takes place, a message is displayed specifying that the system will shut down to allow the upgrades to take effect. Click "OK" on the message and the CAPI Interviewer system is terminated. Double clicks on Interview Menu to start the data collection system again.

9.7 Identification Codes and Result Codes

The initial result code or outcome selection module for the household interview, a standard component in KMDHS-style surveys to document the status of each attempted visit. It is prompted after the interviewer locates the sampled household but before proceeding to the full

questionnaire. The bold header reads: "ENTER 1 TO START INTERVIEW OR RECORD THE RESULT OF THE HOUSEHOLD INTERVIEW," serving as a clear navigational prompt. Below it, a series of radio button options (represented by circular checkboxes, with one likely pre-selected or highlighted) allow the interviewer to select the outcome of the visit. This branching logic ensures accurate tracking of non-response cases, which is crucial for calculating response rates, adjusting sampling weights, and maintaining survey representativeness in the KMDHS dataset. The options listed are typical for household-level contact history in CAPI systems, designed to capture reasons for non-completion:



1. No household member at home or no competent respondent at time of visit: This is the default, indicated by a filled radio button (○ with a dot). It records temporary unavailability, allowing for callbacks without classifying the case as a failure.
2. Entire household absent for extended period of time: Selected via an empty radio button (○), this flags long-term absences, such as migration or travel, which may require alternative contact strategies.
3.Postponed: An empty radio button option for cases where the interview is scheduled for later, preserving the case for follow-up.
4. Refused: An empty radio button for outright refusals, a key non-response category that impacts survey bias analysis.
5. Vacant or address not a dwelling: For invalid addresses, such as abandoned structures or commercial sites misidentified as residences.
6. Dwelling destroyed: Accounts for structural damage, common in disaster-prone or informal settlements in Kenya.
7. Dwelling not found at time of visit: For unmapped or relocated households, reflecting challenges in GPS-enabled sampling.
Other: An empty radio button for miscellaneous issues, often prompting a text entry field in CAPI for details.

10. API SUPERVISOR SYSTEM

KNBS and ICF International have developed a comprehensive automated field supervisor's system for the Demographic and Health Survey. Knowing this control system is a critical component of being an effective supervisor. There are a series of supervisor specific tasks that were undertaken during a paper interview but are now integrated parts of the CAPI system. You should understand three layers of functions across the whole system, to organize and supervise the fieldwork successfully. These layers include:

1. Controlling the conduct of interviews among your team
2. Completing your own tasks
3. Communicating with the central office

The interface is divided into two main panels: a left-side navigation menu and a central data display area. The navigation menu, rendered in blue with white text, offers a suite of supervisory functions:

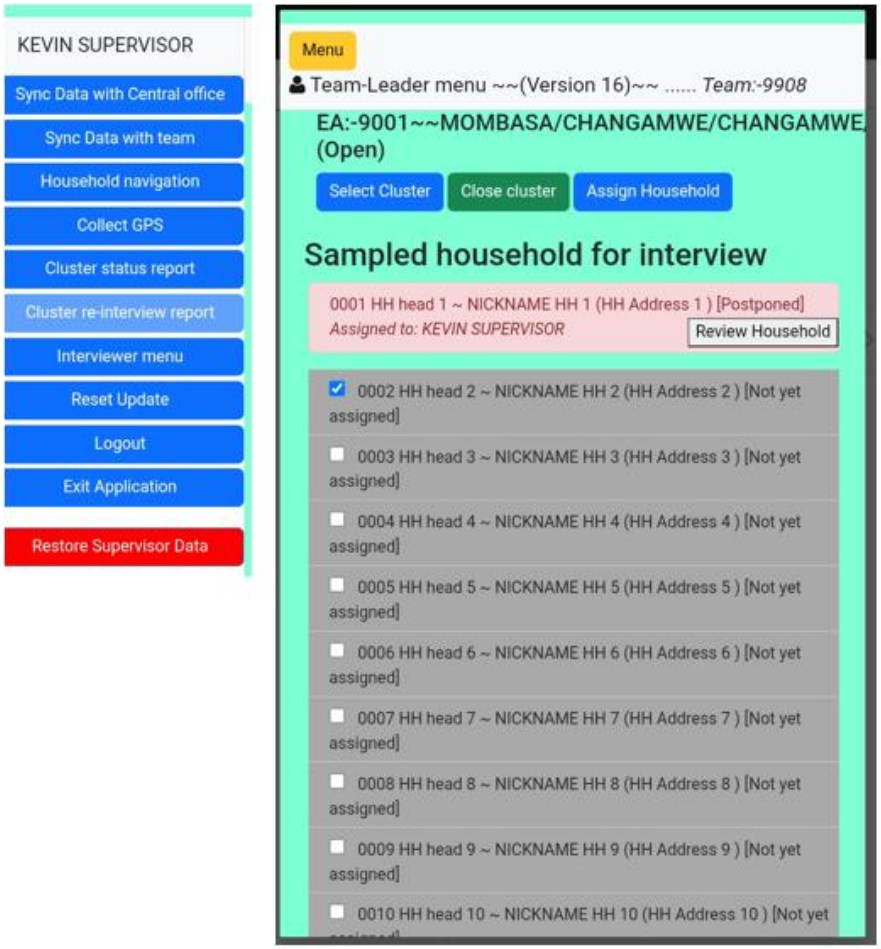
- **Sync Data with Central Office**: Facilitates uploading collected data to a central server, ensuring real-time data availability for monitoring.
- **Household Navigation**: Opens a module to navigate through household records.
- **Collect GPS**: Allows supervisors to record geographic coordinates for mapping and quality control.
- **Cluster Status Report**: Generates a summary of progress within the current cluster.
- **Interviewer Report**: Provides individual interviewer performance metrics.
- **Reset Update**: Resets update statuses, potentially for troubleshooting or reprocessing.
- **Logout**: Secures the session by logging out the supervisor.
- **Exit Application**: Closes the application.
- **Restore Supervisor Data**: Recovers previously saved supervisory data, ensuring data integrity.

The central panel, with a green background, displays the "Select Cluster Close Cluster Assign Household" section, indicating the supervisor is managing cluster-level assignments. The team identifier "EA-0901MOMBASA/CHANGAMWE/CHANGAMWE" suggests this cluster is in the Changamwe area of Mombasa County, a key urban region in the KMDHS sampling frame. The supervisor, labeled "KEVIN SUPERVISOR," oversees this team, and the screen lists households within the cluster, each with a unique identifier (e.g., 0001 HH head 1), nickname (e.g., NICKNAME HH 1), address (e.g., Address 1), and interview status (e.g., Postponed, not yet assigned).

The "Review Household" link next to each entry allows the supervisor to access detailed records or update statuses, a feature that supports quality control by enabling review of interview outcomes (e.g., completed, refused, or postponed) as seen in the earlier CAPI screenshot. The "Assigned to KEVIN SUPERVISOR" notation for the first household indicates direct supervisory oversight, possibly for high-priority or problematic cases, reflecting CSPro's flexibility in task delegation.

Functionally, this screen serves as a cluster management hub. The supervisor can assign households to interviewers, track progress, and resolve issues like postponements by using the "Assign Household" option. The "Collect GPS" feature ensures spatial data accuracy, critical for KMDHS's GPS-enabled sampling to monitor coverage in diverse terrains, from urban Mombasa to rural areas. The "Sync Data with Central Office" option enables real-time data transmission, allowing KNBS to monitor fieldwork progress and response rates across the 47 counties. The

"Cluster Status Report" and "Interviewer Report" provide analytical tools for performance evaluation, ensuring timely interventions if targets are missed, as the KMDHS aims to maintain data quality



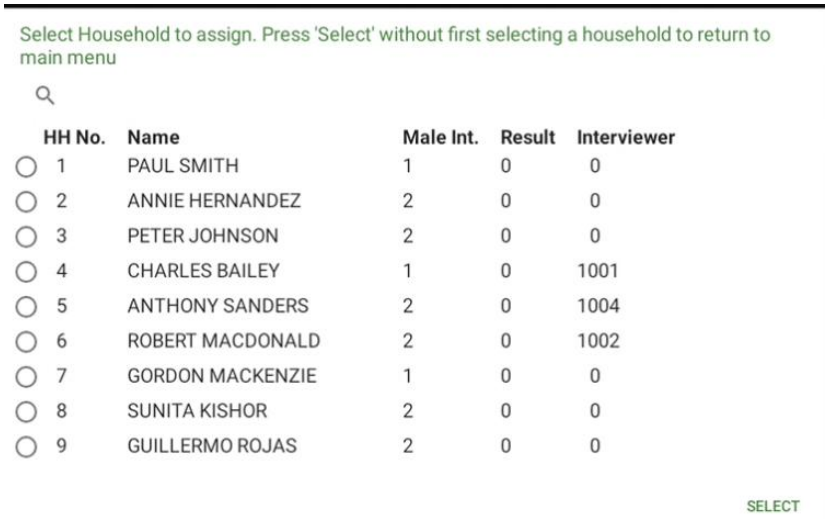
11. MAIN MENU

11.1 Assign households for cluster

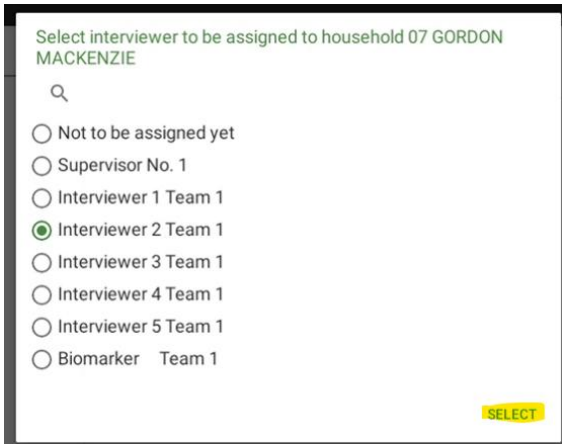
To assign households, click on the option “Assign interviewers”. The system will show a list of all households selected for the cluster, along with information about interviewers assigned to those households. The information is shown in five columns as described in the table below.

Title	Description
HH.No	Household number from the household listing.

Name	Name of the head of household. If the household has not yet been interviewed this information comes from the data collected about the household during the household listing operation. If the household interview has been completed, this information is updated with the name of the head of the household from the household interview.
Result	Result of the household interview. Code '0' means that the household was not yet visited for interview.
Interviewer	Code of the interviewer assigned to that household. Code '0' means that no interviewer has yet been assigned.

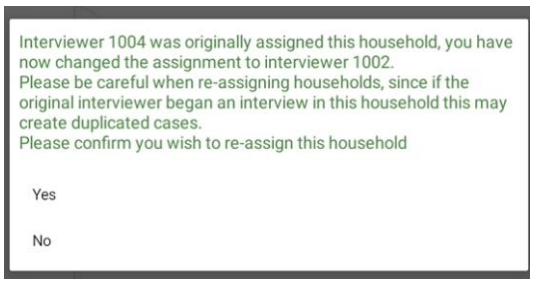


To assign a household to an interviewer, first select the household by tapping the circle at the start of the line containing the household you wish to assign. The system will then show a list of interviewers in the team. Select the interviewer you wish to assign to this household, then tap the "Select" button. The system will assign the household to the selected interviewer and then return to the list of households.



Re-assigning households to another interviewer

If a household was already assigned to another interviewer and the supervisor changes the household assignment, the system will display a warning message and ask them to confirm the re-assignment before continuing. The reason for doing so is to ensure that the supervisor really means to re-assign that household, and that the household was not assigned in error. The supervisor should carefully review the message and ensure that they really wish to assign the household to another interviewer before confirming with a "Yes"response.



The supervisor should never re-assign a household to a new interviewer before confirming with the interviewer originally assigned to that household that they have not begun an interview in that household. The reason for this is that if the original interviewer began an interview in the re-assigned household, then the household is assigned to a new interviewer who then begins or completes an interview in that same household, there will be two cases for that household in the CAPI system. This will result in duplicate cases being present on the supervisor machine once data is transferred back to the supervisor from the interviewer tablets. Whilst it is possible to resolve issues with duplicate cases by deleting one of the cases as described in section ??, it is better to avoid the need to do so by being careful about re-assigning households.

Exiting the household assignment list

To exit the assignment list once all assignments have been made, just tap the "Select" button again with no households selected and the system will return to the main menu.

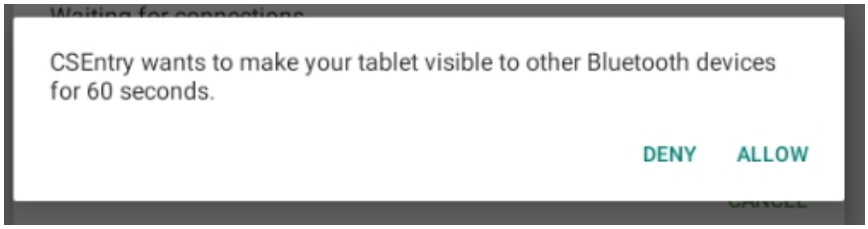
1.2 Send household assignment to interviewers

After the household assignment list has been updated on the supervisor tablet, the supervisor must then transfer that list to all interviewers on the team so that they may begin interviews in the assigned households. This transfer is done by using menu option "2 Send household assignment to interviewers". The system will use Bluetooth to send the household assignment list data to an interviewer.

The assignment list data must be sent to each interviewer in turn.

Supervisor's actions:

1. Make sure that the interviewer to whom you wish to send the assignment list to is in receive mode having selected option "1 Receive HH assignment from supervisor" in the data transfer sub-menu in the interviewer menu.
2. On the supervisor menu, select option 2 "Send household assignment to interviewers".
3. A Bluetooth window will appear, prompting you to allow the tablet to be visible to other Bluetooth devices for 60 seconds. Select "Allow" to continue.

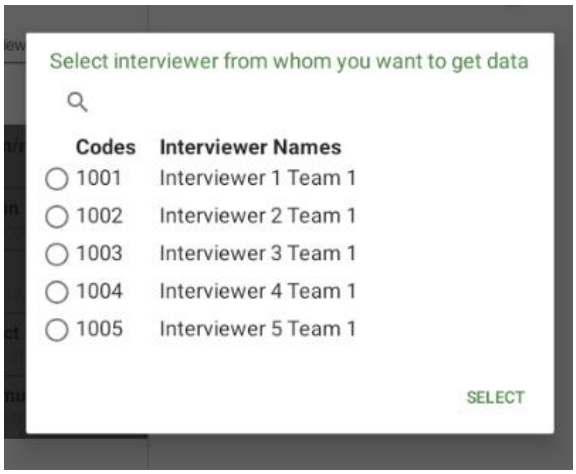


4. When the connection is established to the interviewer tablet, the transfer will take place. The window will give the status of files transferred. Wait until the transfer is completed.

When the transfer is completed, the system will return to the main menu.

3 Get questionnaires from interviewer

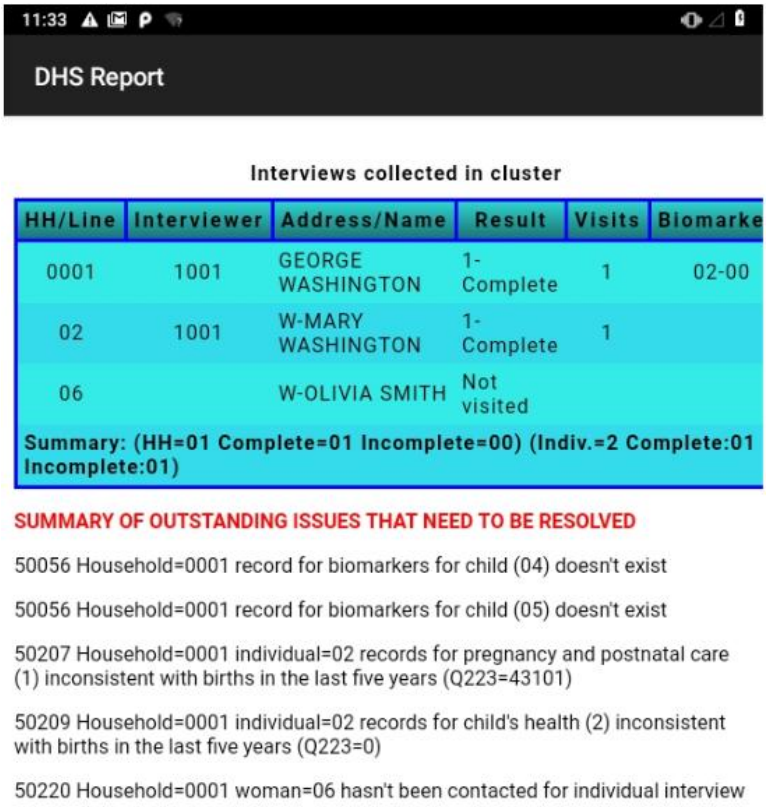
The function allows you to receive both the completed and incomplete interview data from the interviewers. On the interviewer's tablet ask the interviewer to use option "A" to access the "Data Exchange/Other utilities" option and then option 1 "Transfer cluster data to supervisor" to send the questionnaires collected by that interviewer from the interviewer's tablet to your tablet. On the supervisor tablet, you will select "Get questionnaires from interviewer" and then choose which interviewer you'd like to receive data from. You are only able to receive data from one interviewer at a time. This step is also necessary when you interviewed a household or respondent on your supervisor tablet.



Once the program has reviewed all the questionnaires it has received, a cluster status report of questionnaires will be displayed. This cluster progress report will include only the questionnaires collected by the interviewer which have been transferred to the supervisor's tablet. Details about the status report are given in section 7 below.

4 List data from interviewer

The option gives you the opportunity to see a summary of the interview progress for the current cluster. When you click on it, you will choose which interviewer's data you would like to see. It will display a summary similar to the one generated through [Main menu] -> [7 Close/list cluster], but without checking the consistency between biomarker questionnaire and transmittal sheet.



This listing pertains to household 1 completed by Interviewer 1001. Error messages 50056 indicate that the biomarkers for household 1 have not been entered. This is also noted under "Biomarker", where the first number is the number of questionnaires that need to be complete (2), and the number of completed questionnaires (0). There are also some issues with the woman's individual questionnaire for invidual line number 2. Also, you can see that woman, line number 6 has not been interviewed yet.

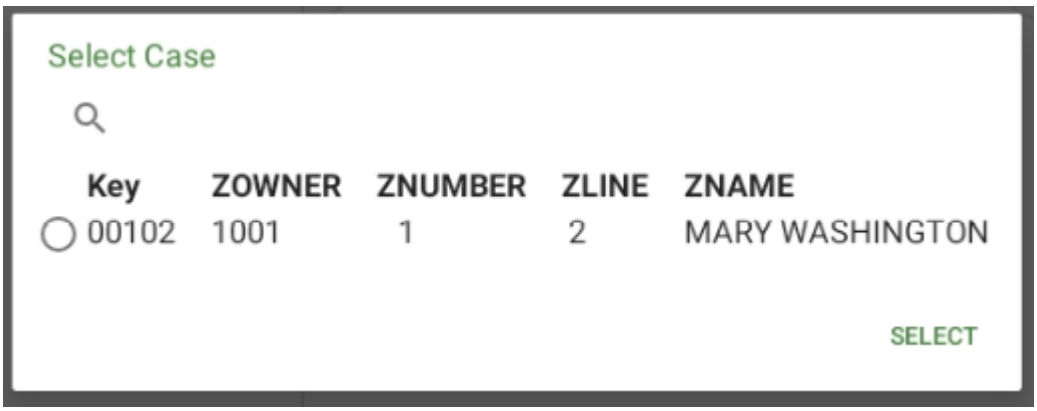
4 Review Household Questionnaires

This function allows supervisors to see what data have been collected by the team. It will give you a list of interviewed households, as shown below. Then you choose the household and then proceed to the questionnaire.



5 Review Individual Questionnaires

The function acts the same way as reviewing the household questionnaires. It will give you a list of interviewed individuals, as shown below. Then you choose the individual and then proceed to the questionnaire.



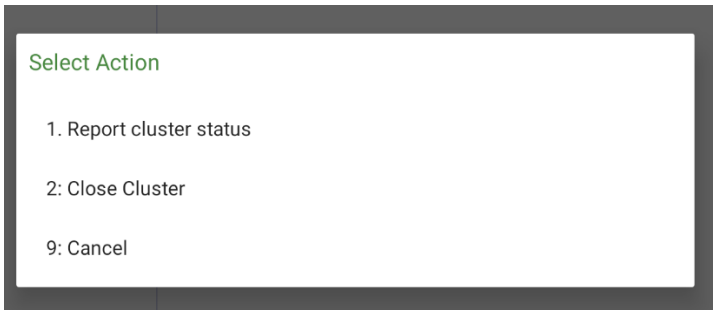
7 Close/Status report

This option is used by the supervisor to check on the progress of work in the cluster. It will generate a report showing the following information, based on the data received from interviewers on the supervisor tablet:

- Households interviewed
- Eligible men and women interviewed or visited
- Eligible members for biomarkers and the status of the testing

It will also check the internal consistency of questionnaires that have been completed to make sure they are complete and correct. Note that partially saved questionnaires will not be checked for internal consistency.

When the option 7 is selected the system will show a sub-menu as follows:

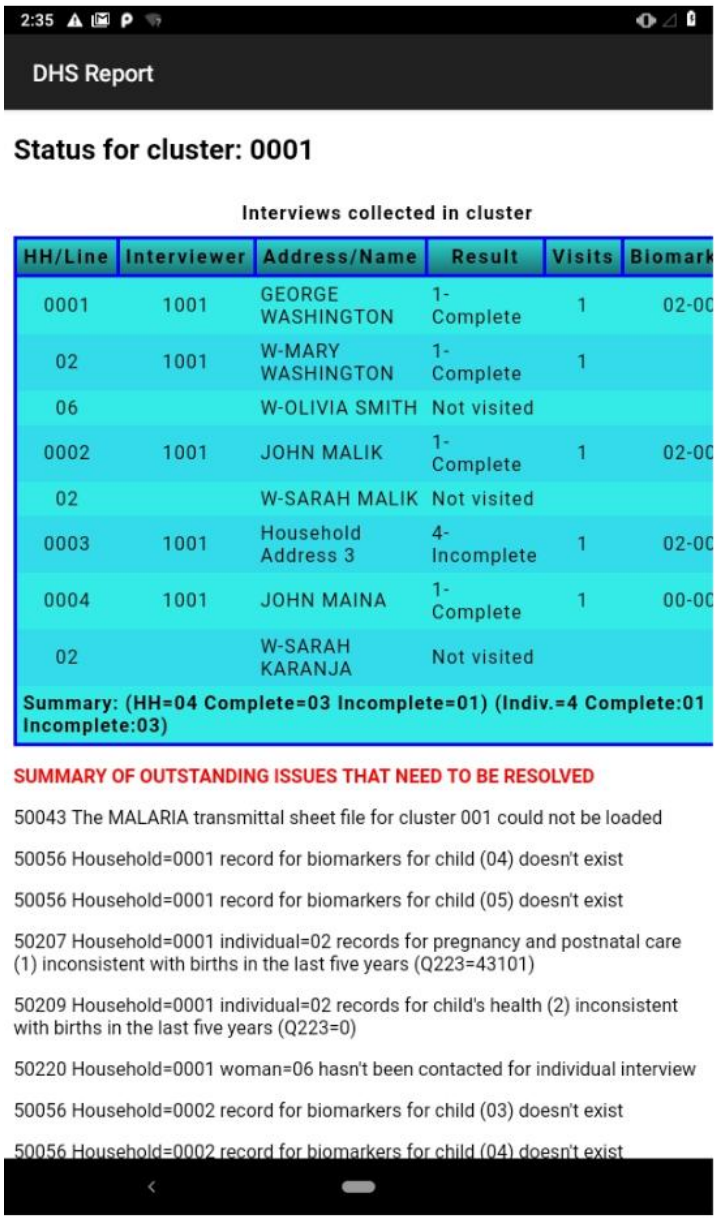


Option 1 "Report cluster status" will generate a status report showing work in the cluster and a list of messages identifying interviews and biomarkers tests that are outstanding.

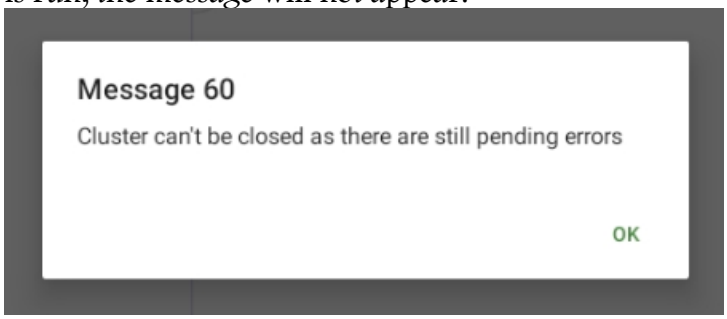
Option 2 "Close cluster" will generate the same status report, but will check to see if all questionnaires are present before preparing the cluster data to be sent to the central office as finalized, "closed" data.

When all work is completed in the cluster, the supervisor must run this menu option to "close" the cluster. The KMDHS software will check all of the questionnaires in the cluster from all interviewers are present on the supervisor tablet. In addition to checking the questionnaires, it also checks that the bar codes entered by you in the transmittal sheet match the bar codes entered from the biomarker forms by the interviewers in the household questionnaires.

Supervisors shouuld use the report generated (as shown below) to determine if there are any outstanding interviews or biomarkers questionnaires to be completed. .



When using option 2 “Close cluster”, unless the cluster’s data pass all the system checks under this function, you will receive the error message as shown below. When option 1 “Status report” is run, the message will not appear.



"Closing" the cluster is the last step for the team and supervisor before leaving the cluster. The steps for the close are as follows:

1. All interviewers run option 9 "List questionnaires in cluster" and check that they have completed all questionnaires. No "partial cases", or cases "not visited" should remain, and the number of biomarkers listed under "H/W" should match (i.e., the number of children eligible for biomarkers in this household, should match the number of biomarker measurement taken).
2. All interviewers send their data to the supervisor
3. The supervisor ensures all biomarker questionnaires are completed and entered
4. The supervisor ensures that all bar codes from the transmittal sheets have been entered on the supervisor electronic transmittal sheet using option T "Enter transmittal sheet" on the supervisor menu.
5. The supervisor then uses the option 6 "close/list cluster"

If there are no outstanding items or errors, the system will display a message with the text "Cluster successfully closed". If there are remaining issues to be resolved, the system will indicate that the cluster cannot be closed until the issues are resolved.

Checks that are made during the close:

1. All selected household must be visited with **EITHER:**
   - A complete interview **OR**
   - An interview recorded with an incomplete result code e.g. "Postponed", "Refused", "Dwelling not found" etc.
2. All eligible women must be visited with **EITHER:**
   - A complete interview **OR**
   - An interview recorded with an incomplete result code e.g. "Postponed", "Refused", and "Incapacitated" etc.
3. No partially saved data (all interviews finished or marked result code that is not equal to 1)
4. All biomarker measurements and tests must be completed, including cases where respondents refused, or filled out with "Not Present" codes.
5. All transmittal sheet barcodes scanned
6. Each barcode found in the biomarker questionnaire must have a corresponding entry in the transmittal sheet.

Resolving outstanding issues to close the cluster.

The first step in resolving any outstanding issues prior to closing the cluster is read the status report carefully. For each error message or missing item, note the following:

1. Household number
2. Line number (if the issue affects an individual questionnaire)
3. Code and name of the interviewer responsible for the household, individual or biomarker questionnaire.
4. Details of the message

The following procedures should be followed to resolve outstanding issues.

Questionnaires not completed

1. Instruct the interviewer to return to the household and complete the interview

2. If the interview cannot be completed, enter the cover sheet on the tablet and record the reason why the interview cannot be completed, then transfer interviews to the supervisor.

Questionnaires that are partially saved, or messages indicating that sections are missing or are in the wrong questionnaire.

1. Check the interview on the interviewers' machine and use the "Advance to End" button in the menu bar to try to go to the end of the interview and save the data.
2. If there are questions remaining to be completed, instruct the interviewer to return to the household to complete it.
3. Resend the interviewers data back to the supervisor and re-run the close.

Note that the cluster cannot be closed if there are duplicate cases in the data file.

Once all of the data for the cluster have been entered and all errors that the program displayed have been corrected, the cluster is considered complete and can be sent to the central office via the internet.

12. TRANSFER DATA TO CENTRAL OFFICE

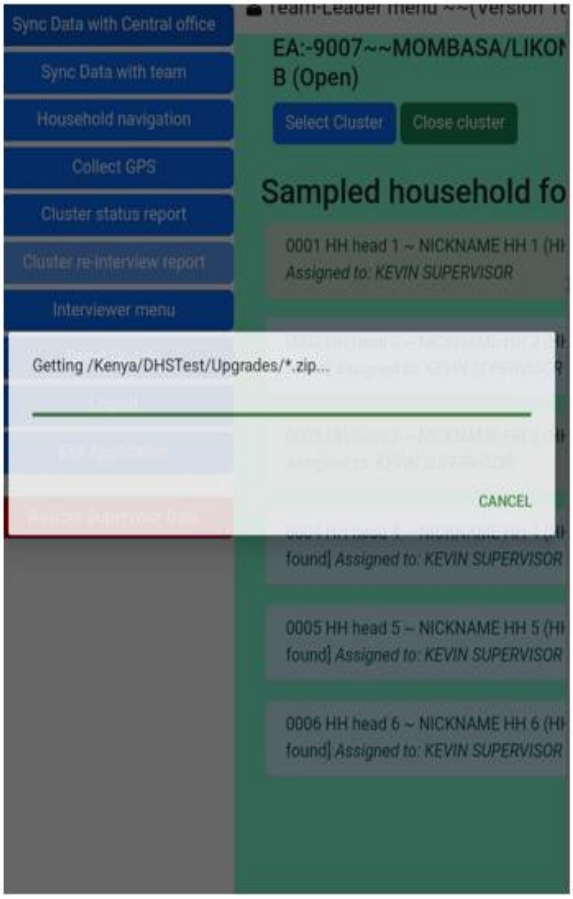
This function is to let supervisors communicate with the central office through the SyncCloud transfer system. A timely operation on this will help backing up the interview data in the cloud / central office. It will also allow central office to process other tasks in time, such as secondary editing, producing field check tables, evaluating the current fieldwork, etc.

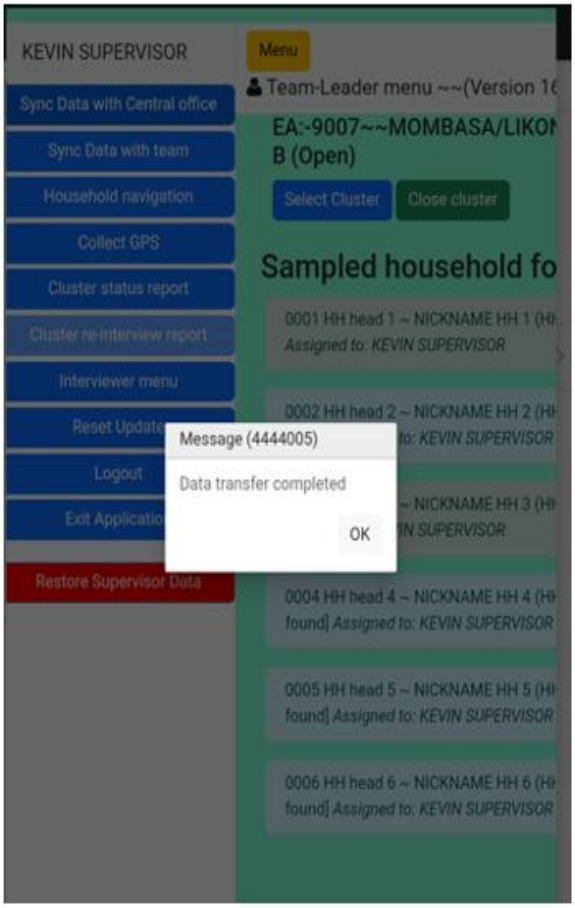
When the option is run the system will open the SyncCloud app as shown below. It will automatically log into the SyncCloud system and automatically upload data collected. It will also download any new updates for the KMDHS system. It may take some time for data transfers to be completed particularly if internet connection speed is not fast. Wait patiently until the transfer is completed.

The left pop-up window, titled "Getting Kenya/KMDHSTest/Upgrades/.zip," indicates an ongoing process of downloading or installing an update file (e.g., software upgrades or survey protocol revisions) for the CAPI application. The progress bar, partially filled with a green segment, suggests the update is in progress, though the exact percentage is not visible. A red "CANCEL" button in the lower right corner allows the supervisor to halt the process if needed, providing flexibility to address connectivity issues or prioritize immediate fieldwork tasks. This update mechanism ensures the CAPI system remains aligned with the latest data collection standards, addressing potential bugs or adding new modules (e.g., for the 2025 KMDHS's).

The right pop-up window, labeled "Message (44405)," confirms a completed action with the text "Data transfer completed" and an "OK" button. This indicates that a batch of collected data likely household interview results, GPS coordinates, or interviewer logs from the Likoni cluster (EA-0007 MOMBASA/LIKONI) as seen earlier has been successfully uploaded to the central KNBS server. The timestamp (04:00:05 from the previous screenshot) aligns with this completion, suggesting a 4–7-minute processing window, typical for syncing in areas with variable internet connectivity like coastal Mombasa. The "OK" button allows the supervisor to acknowledge the transfer, closing the window and enabling further actions, such as assigning new households or generating reports.

Functionally, these pop-ups illustrate the dual data management tasks supervisors handle during fieldwork. The "Getting Kenya/KMDHSTest/Upgrades/.zip" window reflects proactive system maintenance, ensuring the CAPI tool (likely CSPro version 7.6 or later, used in MDHS surveys) is updated with the latest validation rules or data templates, as recommended by KNBS for the 2025 KMDHS. The "Data transfer completed" message confirms the "Sync Data with Central Office" function's success, a core feature for real-time monitoring. This synchronization is vital for tracking response rates





Automatic launching of SyncCloud app

The KMDHS system will automatically run the SyncCloud application once a day to ensure that field data are updated and any necessary upgrades are downloaded to teams. Each time the supervisor opens the supervisor menu in each day the system will check to see if it has connected to SyncCloud for that day and will make a connection if it has not. Once the system has logged in and completed transfers, there will be no more automatic connections during that day. However, the supervisor can always connect at any time if needed (for example, to download a new update).

13. LIST CLUSTER NOTES

You can use this option to review the notes that interviewers have recorded by the end of each questionnaire. The notes are sorted by questionnaire type.

Listing Notes for Cluster: 0001

Household	Line	Field	Date (dd/mm/yyyy)	Time (hh:mm)	Note/Observation
Households					
0001		QHFINISH	15/05/2020	15:22	cooperative interviewer
0002		QHFINISH	18/05/2020	18:51	lots of noise
0003		QHFINISH	18/05/2020	19:39	quick interview because they had to get back to cooking
0005		QHFINISH	18/05/2020	20:00	respondent was very friendly
Individuals					
0001	05	QFINAL	18/05/2020	18:43	good job

U Send upgrades to interviewers

From time to time, upgrades may be downloaded to your tablet from CSWeb. If these upgrades need to be installed on the interviewer tablets in your team, the system will display a message alerting you.

Upgrades are transferred to the interviewer tablet using Bluetooth transfer. The procedures for transfer are essentially the same as for transferring the household listing to interviewers. Upgrades can be transferred to multiple interviewers at the same time.

To transfer and install upgrades on the interviewer tablet after you have been alerted to a download by CSWeb use option "Send upgrades to interviewers". The interviewer must use option "A" "Data exchange/other utilities" and then select "5" "Receive system updates from supervisor" to put their machines in receive mode prior to the supervisor sending the upgrade.

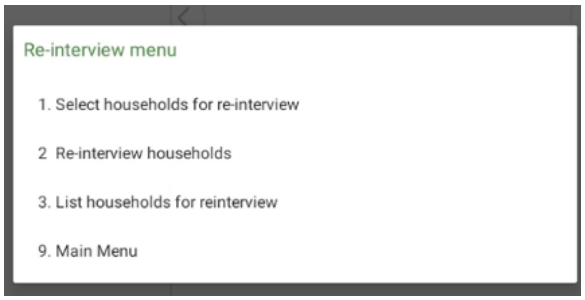
Once the upgrade is transferred the system will automatically install it on the tablet of the interviewers. After installation a message will be displayed indicating that the tablet menu will shut down to allow the upgrade to be applied. Click "OK" and the system will exit the menu. Restart the interviewer menu to complete the upgrade process.

Upgrades for the supervisor machine are installed automatically and do not require any further action on the part of the supervisor.

I. Reinterview Menu

The reinterview menu is used to do all tasks related to reinterviews done by the supervisor. The menu allows the supervisor to make a random selection of households for reinterview, carry out reinterviews in those households, and display a list of reinterviews together with a comparison of data collected in the original and reinterview.

To enter the reinterview menu enter option I:Reinterview Menu from the supervisor menu. A sub-menu as shown below will appear:

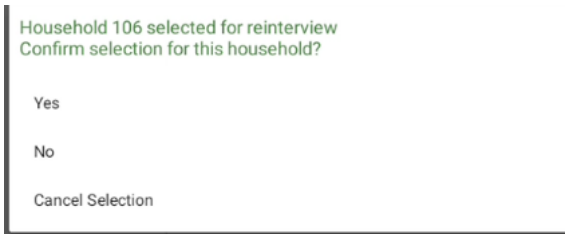


1. Select Households for reinterview

When this option is selected the CAPI system will randomly select a household for reinterview from the households that have been completed and received on the supervisor tablet from interviewers.

Note: to select households for reinterview at least two households must have been completed by interviewers and received on the supervisor tablet. The system can only select from households that are completed and not partially saved.

When the option is selected the system will randomly select a household and present a dialog asking if you wish to accept the selection of that household.



To accept the selection, answer "Yes". To reject the selection, answer "No" and the system will then select another household and ask you to confirm selection again. Normally you should accept the selection unless for example you know that the household selected cannot be visited for reinterview for some reason.

The third option "Cancel" will stop the selection process and return to the main menu.

You may select up to five households for reinterview. In the KMDHS only two reinterviews are required to be completed per cluster, however, you may make additional selections in case the original selections cannot be visited, or if it is desired to carry out more reinterviews.

2. Re-interview Households

This option is used to start a reinterview for households already selected. Note that you do not need to have selected both households before starting a reinterview.

When the option is selected the CAPI system will show a list of all selected households and their visit status. To begin or modify a reinterview, click on the household to select it.



The CAPI system will then prompt to confirm the selection and begin the household reinterview.

Completing the reinterview

The reinterview proceeds exactly like the household questionnaire except that only questions 1-7 are asked. These are name, relationship, whether usual resident, whether slept the night before in the household, age, and if there are any more household members. Once all members have been collected the system will ask for the name of the person responding to the household questionnaire and ask probing questions 7A-7C. After that, you will be asked to record language of interview, respondent and whether an interpreter was used, then finally record the GPS location. Once all responses have been collected you can finalize the questionnaire in the usual way.

3. **List households for reinterview**

This option lists all households selected for reinterview and shows the status of the reinterview. It also displays a table showing key differences between the data collected in the reinterview as compared with the original interview. An example of the table is shown below.

The data items compared are:

1. Number of household members (including visitors)
2. Number of women aged 15-49
3. Number of children aged 0-5
4. Distance between location of two interviews. Note that this requires GPS co-ordinates to have been recorded for both interviews.

DHS Report

Household	Struct.	Address	Head	RA	Result of reinterview
0011	0003	Struct/Serial: 003 / 004	[redacted]	1800	Complete
0098	0019	Struct/Serial: 019 / 008	[redacted]	1800	Partial

Comparison of original and re-interview data

Household Number	Questionnaire Type	Number household members	Number women 15-49	Number children aged 0-5 years	Distance between location of the two interviews
0011	Reinterview	3	1	1	Not recorded
0011	Original	3	0	0	Not recorded

14. APPENDIX A. RESOLVING PROBLEMS WITH DUPLICATE CASES

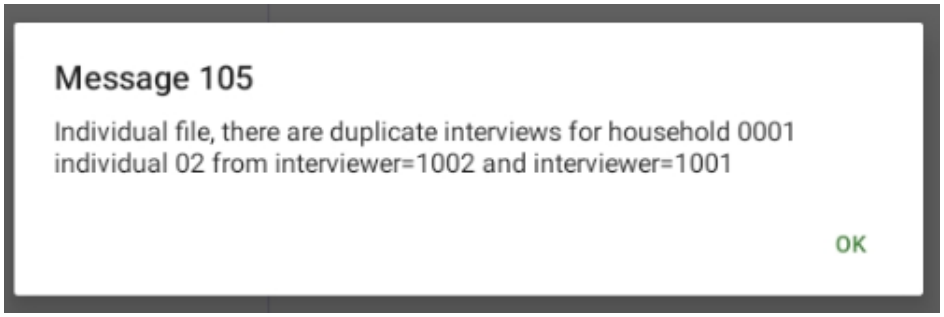
In the KMDHS data collection system, all interviews are identified with identification codes based on cluster number, household number and line number (for individual questionnaires). From time to time, problems can arise when two interviews are created by different interviewers with the same identification codes. This section explains how to identify and resolve problems with duplicate cases.

Duplicate cases typically arise from the following situations:

1. Assignment of households to two different interviewers. The first interviewer visits a household assigned to them and opens the interview, partially saving the cover sheet, to record the fact that the household is not present. Subsequently the supervisor assigns the same household to another interviewer who completes an interview for that household.
2. Poor management of shared households. A household with several eligible members is shared between two interviewers. In error, one interviewer begins and partially saves and interview with a woman whom the other is supposed to interview.
3. Errors made when correcting household numbers.

When there are duplicate cases and the supervisor selects option "3" "List interviewer questionnaire" the following message will appear:

This message indicates that while the program was trying to produce a data file combining all individual questionnaires, it was not able to do so because Household "0001", line number "02" is duplicated in the data file.



To resolve the problem, carry out the following steps:

- Use the error message to identify the interviewers and the household or individual questionnaire concerned.
- Discuss with the interviewers involved, checking their tablets if necessary
- Decide to either:
  - Delete the case that is not a real interview **OR**
  - Correct the identification codes for one of the interviews
- Remember that all changes have to be made on the tablets of the interviewers
- When the correction has been made, do a transfer of the data from the interviewer tablet to supervisor tablet to remove the duplicate from your tablet
- "List the interviewer questionnaires" again to verify that the duplicate case has been removed

Refer to section 9.7 “Modify/Delete Questionnaire ID codes” on how to find and repair or delete a case, cluster number, household number, interviewer number or line number of a respondent.

15. APPENDIX B. ERROR MESSAGES

Supervisor’s Menu

001 cluster=NNNN not defined as part of the sample file

The cluster number entered is not a valid cluster number and cannot be found s part of the sample. Correct the cluster number.

005 You must select a household

You are required to select a household to use the requested option. Retry this option and select one of the households listed.

007 You must select an individual

You are required to select an individual to use the requested option. Retry this option and select one of the individuals listed.

008 Directory X is not present, the system will abort

Neither the sample file for this supervisor (SUPERVnnnn.DAT) nor the general sample file (SUPERVXXXX.DAT) were found or they are empty. Please contact IT for support

011 Household interview incomplete (n)

This is just a warning message that the household to be reviewed is an incomplete household interview.

017 There are no files for cluster NNNN interviewer NNNN

Either select the correct cluster or interviewer code and then retry this option. If the cluster and interviewer code are correct, check that the files have been transferred from the interviewer’s tablet.

018 There are files for cluster NNNN interviewer NNNN-XXXX that have not been accepted yet. Change current interviewer and repeat the process

Data files were transferred from an interviewer to the supervisor, but have not been checked. Change the interviewer number to this interviewer and use option 3 to check the files.

019 It wasn’t possible to copy the files for (NNNNiiii) to receive directory

The copying of the file for cluster **NNNN** and interviewer iiii failed. Try repeating this option. If it still fails, please contact IT

040 Individual data transferred. Its check will be done when listing or closing the cluster.

No household data exists from this interviewer, so the only checks that will be done are on individual data, and these will be done when listing or closing the whole cluster.

055 Individual interview incomplete (n)

This is just a warning message that the individual questionnaire to be reviewed is an incomplete individual interview.

060 Cluster can't be closed as there are still pending errors

The closing of this cluster can only take place after all of the errors in the data are resolved. Correct the data on the original interviewer's tablet and then re-transfer the interviews to the supervisor.

067 Can only review individuals for complete households (NN)

Individual interviews can only be reviewed for households with completed household interviews. Check the household number and to ensure that it is the correct household.

068 Cannot select individuals that haven't been visited

It is not possible to view the questionnaires of individuals that have not yet been visited. Check the household number and the individual's name and line number.

075 There are still processes pending before the data can be transferred to the central office

Complete all checks on the EAs data before closing the cluster.

080 There are no files available yet in the supervisor tablet for cluster NNNN

Transfer data files from an interviewer prior to attempting to use this option.

090 It is recommended to exit the system so that upgrades take into effect after reentering

After upgrading the programs on the tablet the KMDHS system must quit to permit it to restart with the upgraded version. After the program terminates, restart the Supervisor's menu.

100 Household file, in household NN the first record isn't valid 'NNNN' in line NN

The concatenated data file 'NNNN' is not a valid file. Household NN starts with an invalid record identifier. Modify the data for this household in the original interviewer's tablet, for household and women files, and then transfer the files back to the supervisor's tablet and try again.

101 Household file, household NN duplicated in line NN

The concatenated data file contains an invalid individual identifier. Modify the original file in the original interviewer's tablet and then transfer the file again.

104 Individual file, in household NN individual NN duplicated in line NN

A duplicate individual case is found in the concatenated data file for the cluster. Check to see if the individual was started more than once in different tablets. Delete the entry from the tablet of the interviewer who opened the case in their tablet, but did not interview the individual. Use option 4 from the utilities menu (option 11) of the interviewer's menu.

109 Cluster successfully closed

The supervisor processing of the cluster was successfully completed.

Structure check messages

50040 cluster NNNN has no households assigned for collection (NN)

Reviewing of questionnaire data can only be done after some interviews have been assigned and the interviews conducted.

50041 Cannot load control file for cluster NNNN

The supervisor's control file for cluster NNNN could not be opened. Check the cluster number and modify as necessary.

50042 Cannot load household assignments file for cluster NNNN

The assignments for the selected households for the survey can not be loaded into the computer. Please contact IT

50050 Household=NN Persons in household roster (NN) inconsistent with total number of persons (NN)

The number of persons in the household roster does not agree with the total number of persons recorded on the cover page of the questionnaire. Review the questionnaire on the original interviewer's tablet and change the data as needed. Then transfer the data back to the supervisor.

50051 Household=NN Eligible women in household roster (NN) inconsistent with total eligible women (NN)

The number of eligible women in the household roster does not agree with the total number of eligible women recorded on the cover page of the questionnaire. Review the questionnaire on the original interviewer's tablet and change the data as needed. Then transfer the data back to the supervisor.

50055 Household=NN Partially collected, structure not checked

For partially saved questionnaires, the full structure check is not performed. Complete the interview for this household and then review the structure after the interview is completed.

50100 Household=NN Record missing with information for NNNN

There is on or more record missing from the household data that are expected for a complete interview. If the questionnaire is a partially saved questionnaire, the case should be completed and then re-checked.

50110 Household=NN This is an incomplete household (result=N)

There are additional records found for an incomplete interview. If the case is partially saved it should be re-checked. Review and modify the questionnaire on the original interviewer's tablet and then transfer the data back to the supervisor.

50150 Review households found (NN) with initial households (nn) and those registered in control file (nn)

The number of households found in the data is not consistent with the number assigned or the number registered internally. Check and review the households selected and interviewed.

50151 Number of households found and registered (nn), but there are still errors that need to be resolved

Correct the outstanding errors and then re-check the data.

50200 Household=NN NNNN =NN partially completed, structure will not be checked at this time

See 50055.

50206 Household=NN Interviewer=NNNN birth records (n) inconsistent with total children ever born (Q208=n)

The number of births in the history for this woman's questionnaire does not agree with the number recorded in Q208. Review the questionnaire on the original tablet and correct the problem before re-transferring the data to the supervisor.

50207 Household=NN Interviewer=NNNN records for pregnancy and postnatal care (n) inconsistent with births in the last 36 months (Q223=n)

The number of records in the maternity and vaccinations modules does not agree with the number of births in the Pregnancy History in the past 36 months . Review the questionnaire on the original tablet and correct the problem before re-transferring the data to the supervisor.

50210 Household=nnn The household has been accepted, but later changes have caused an error

The household's questionnaires had previously been accepted as complete, but later changes to the data have led to one or more errors. Review and modify the data on the original tablet to correct the errors and then re-transfer the data.

50211 Household=nnn Individual questionnaires had previously been accepted but modifications made after caused errors

The individual's questionnaire had previously been accepted as complete, but later changes to the data have led to one or more errors. Review and modify the data on the original tablet to correct the errors and then re-transfer the data.

50220 Household=NN NNNN=NN hasn't been contacted for individual interview

The individual has not yet been visited for interview. After interviewing the individual, re-check the data.

50221 Household=NN duplicate. Interviewed by NNNN and by NNNN. Review the households of each interviewer.

A questionnaire for the household number was already found recorded for a different interviewer. Sometimes one interviewer makes the first visit to a household, but is unable

to conduct the interview and a second interviewer then conducts the interview later. In this case, review both questionnaires and delete the case that is for the incomplete interview from the original tablet using option 4 from the utilities menu (option 11) of the interviewer's menu.

50225 Household=NN assigned to interviewer NN but collected by interviewer NN.

Household assignment updated

The household questionnaire was originally assigned to a certain interviewer, but a different interviewer conducted the interview. This is just a warning message.

50400 Household=NN not found in the household assignments file. It needs to be accepted by supervisor

A new household number was found in the data file. Ensure that this is truly a split household that was previously considered part of a selected household. If so, accept the new household number, but otherwise correct the household number of this case in the original data file on the interviewer's tablet.

50401 Household=NN wasn't accepted by supervisors it needs to be removed from interviewer NNNN

If the household in 50400 is not a split household from a selected household, then the household number is invalid. Correct the household number of this case I n the original data file on the interviewer's tablet.