



WaSH MEL Toolkit: Methods for Randomly Selecting Households

1. Using Google Maps to identify all households within a community.

Browse through the list of communities and select a community and corresponding GPS location. Example:

9.664649, -0.703827

- a. Copy the GPS location of the community and paste directly into the search box in Google Earth
- b. Press enter.
- c. Google earth will automatically zoom in to identify the point having the GPS location you entered. The image will resolve after a few seconds. If not, check your internet/web connection. Slow connections may give you a slow response or poor resolution.
- d. When the image is resolved, you will have an image of the village/community. Zoom in and out until you see the entire length and breadth of the village/community. In most cases, the housing units will be clustered with a few isolated ones.
- e. When all are in full view, you will have to serially number all the housing units starting from one(1), 2, 3, 4.....etc. To do this, click on the 'Add a placemark button'. When the place mark appears, position it on the desired housing unit. Change the name of the place mark to 1, 2, 3, 4 or appropriate serial number. Repeat this process for all housing units. You can also take a screenshot of the community, paste it into Microsoft Paint, and use Paint to number the houses in the community.
- f. When all the housing units have been numbered, randomly select the correct number of houses. For most communities, this will be six houses to be surveyed and ten alternates in case the selected households are unavailable.
- g. For all selected houses and alternates, obtain the GPS coordinates in Google earth. To do this, right click on each house and select properties when the popup appears. Copy the corresponding latitude and longitude into excel from the 'Edit place mark' dialogue box. Repeat this process until you exhaust all the selected housing units and alternates.
- h. When pasting into excel, note that all latitudes should be arranged in one column whilst the adjacent column should have their corresponding longitudes. In all there should be three columns in you excel sheet. They are:
 - Number of the housing unit
 - The corresponding latitude
 - The corresponding longitude
- i. The first six housing units counting from the top to the bottom are your study housing units/households, which you will designate as 001, 002, 003, 004, 005, 006. whilst the last eight are your alternate households which you should designate as 007, 008016.
- j. Print all 16 household numbers and GPS coordinates on an assignment sheet for the team scheduled to visit this community. If this is not possible, or if changes must be made for any reason, household numbers and coordinates can be sent to the appropriate field team members by WhatsApp.
- k. When visiting each household, the enumerators should ask permission to write the household number in two visible places on or near the door using a black permanent marker. The markings should be small

enough not to be unsightly, but prominent enough that enumerators will be able to see and read them when returning to this household for follow-up monitoring.

2. **Asking community leaders or government officials for a list of all households in a community.**

In some areas, there may be an existing list or roster of households for each community. Partners or government officials may have lists of households according to family name, but may or may not have GPS coordinates for the households. If this is the case, the field manager can use a simple spreadsheet to randomly select households to be included in the monitoring study. The first 6 dwellings will be selected for enumeration, and an additional 10 alternates will be selected in case one or more of the initial dwellings does not have any household with an adult respondent available to participate.

To select random households in Excel:

1. Open the randomization spreadsheet
2. Enter the roster information from all households to be randomized in the spreadsheet (these can be copied from your list or roster of households)
3. Highlight the Randfunction cell and drag the highlighted section down the entire column to the bottom of the list of households
4. “Fill down” to get a full column of random values (these values will change anytime you click or make changes on the sheet)
5. Copy the random values and right-click on the empty column labeled “Random”
6. Paste special → Paste values into the empty column (you now have a column of random values that will not change)
7. Highlight all the data except the Randfunction column (the right four columns of data)
8. Go up to the data tab and select “Sort”; sort the data by the “Random” column from smallest to largest: you have now rearranged your households in a random order
9. Select the first 6 households from the reordered list. These are the households you will monitor. Copy these households and paste them on the “households to monitor” workbook of this spreadsheet.
10. Also select the next 10 households; copy these and paste them on the “Alternates” workbook of this spreadsheet. These will serve as alternates if for some reason you are unable to monitor some of the selected households (i.e. no one is home on two separate attempts, respondent declines to participate, etc.).

Example:

Randomization spreadsheet produced households: 4, 81, 18, 55, 10, 2, 27, 21, 73, 42, 90, 67, 53, 44, 17, 56

Then you would select the 4th household, the 81st household, the 55th household, the 10th household and the 2nd household to interview. If one of those households declined to participate, then you would interview the 27th household, and continue down the line until you have interviewed 6 randomly selected households.

In each case, you would number the households according to the roster: 004, 081, 018, 055, 010, etc...

If a dwelling is found to contain more than one household (i.e. a multi-household compound dwelling), one household will be selected at random from within the compound dwelling to be surveyed. To do this, create a list of the households within the dwelling. Then using the random number generator, enter the maximum number (the number of households in the dwelling). Then hit generate and the number generated will correspond to a number on your list, then generate another number as an alternate in case the first household declines to participate. Visit the first household identified and begin the informed consent process. If the household declines, visit the alternate.

Selected

004, 081, 018, 055, 010, 002

Alternates

027, 021, 073, 042, 090, 067, 053, 044, 017, 056

3. [Enumerating households within the community.](#)

In areas where household lists do not already exist, and the use of Google Earth is not practical, enumerators may need to enumerate all households within a community. If this is the case, teams of enumerators will be sent to study communities and will go to each household, record the head of household name, their GPS coordinates and assign the household an ID (001, 002, 003, etc...). They will visit every household in the community in order to generate a complete list. Once the list of households is generated, then the above protocols for randomly selecting households can be used, in either Excel or using the Random Number Generator App.

To use the Random Number Generator app:

1. Open the random number generator app.
2. From the home screen, swipe from the left side of the phone to the center to bring up the parameters window.
3. Change the number in the “Max Number” field to the total number of households within the village. Leave the minimum number at 1. Make sure “Repeat” is turned off.
4. Swipe from the right side of the phone to the center to close the parameters window.
5. Click the generate button at the bottom of the main window to generate a random number.

6. Write down the number.
7. Repeat this until you have 16 randomly generated numbers (6 selected households and 10 alternates). If a number is repeated, discard it and try again until you have 16 unique random numbers. Match the random numbers to the list of households and identify which households were randomly selected.

Very large communities

In some cases, teams may need to enumerate very large communities (>300 houses). In such cases, the community should be divided into sections of approximately equal size, with no more than 500-1000 houses per section. Then one or more sections can be selected at random, and households can be selected at random from within those sections.