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| The Alliance for  
Malaria Prevention

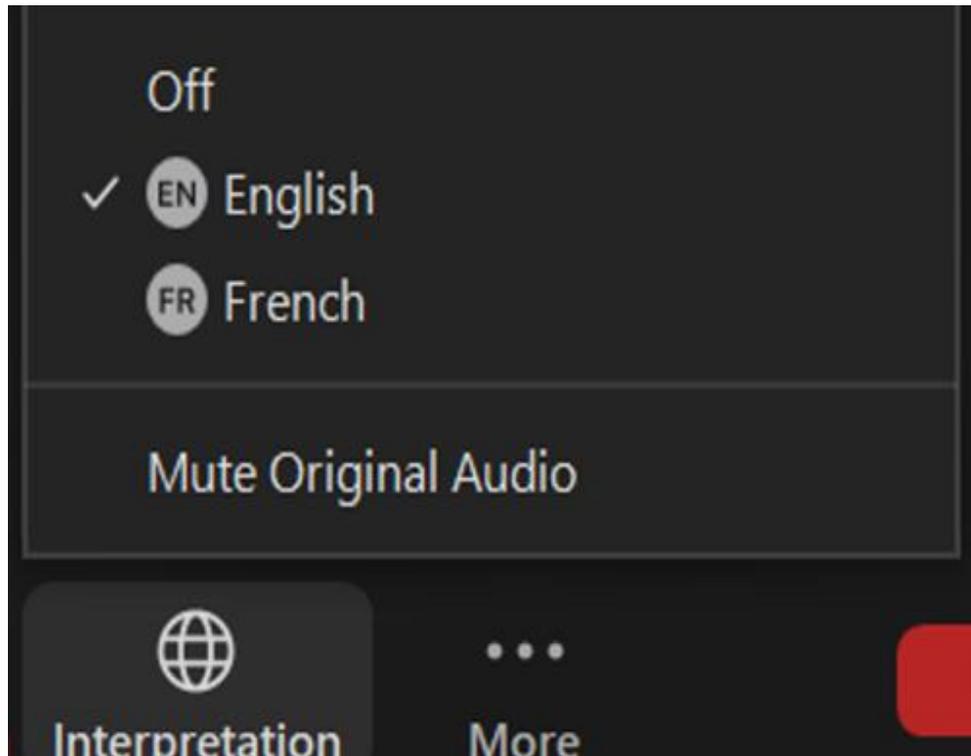
# ITN campaign assessment training

6<sup>th</sup> June 2023



# Welcome to the ITN campaign assessment training

## Bienvenue à la formation d'évaluation des campagnes MII



### Interpretation / Interprétation

Select your language now at the bottom of the screen– veuillez choisir votre langue de preference en bas de votre écran

Please choose from: **English & French/ Veuillez choisir l'anglais ou le francais**

Session will begin shortly – la session débutera bientôt

# Day 1

ITN Campaign Assessment using Clustered Lot Quality Assurance Sampling (cLQAS)

# Agenda

- Introduction and overview
- Overview of Procedures for ITN Campaign Assessment
- ITN campaign assessment approaches and terminology
- Clustered Lot Quality Assurance Sampling (cLQAS)
- Identifying the sampling frame
- Sampling clusters in the lot (Selecting 6 clusters), PPS community list sampling
- Selection of households

# Overview of Procedures for ITN Campaign Assessment



PROCEDURES FOR ASSESSING THE QUALITY OF INSECTICIDE-TREATED NET (ITN) MASS DISTRIBUTION CAMPAIGN HOUSEHOLD REGISTRATION AND ITN DISTRIBUTION ACTIVITIES USING CLUSTERED LOT QUALITY ASSURANCE SAMPLING (CLOAS)

SEPTEMBER 2022

**amp** | The Alliance for Malaria Prevention  
Expanding the ownership and use of mosquito nets

- Developed by the Alliance for Malaria Prevention (AMP): [Procedures for assessment the quality of ITN campaigns](#)
- Provide guidance and easy-to-use tools for household visits
- Includes 14 annexes
- Intended users:
  - National ITN campaign coordination committee
  - ITN campaign M&E sub-committee
  - Personnel and partners involved in assessing quality of household registration and ITN distribution in mass campaigns.
- Global and country resources available at: <https://drive.google.com/drive/u/1/folders/1mmrN3Zwrtp810keNf-vQZBqiW7s8AM53>

# Procedures for assessment: Steps 1 to 3

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	<b>STEP 1.</b>	<b>Review ITN campaign coordination structure and identify common understanding of campaign and assessment needs</b>	<b>11</b>
	<b>STEP 2.</b>	<b>Identify assessment goals and approach, objective and primary ITN campaign indicators for a potential assessment</b>	<b>12</b>
	<b>STEP 3.</b>	<b>Decide whether to undertake an assessment</b>	<b>17</b>
	<b>STEP 4.</b>	<b>Design the assessment and develop assessment protocol</b>	<b>22</b>
	<b>STEP 5.</b>	<b>Develop assessment financial plan</b>	<b>34</b>
	<b>STEP 6.</b>	<b>Identify and plan recruitment of assessment teams</b>	<b>36</b>
	<b>STEP 7.</b>	<b>Develop assessment questionnaires</b>	<b>39</b>
	<b>STEP 8.</b>	<b>Train assessment personnel</b>	<b>42</b>
	<b>STEP 9.</b>	<b>Prepare and conduct data collection fieldwork</b>	<b>44</b>
	<b>STEP 10.</b>	<b>Compile, analyse, report and use data</b>	<b>47</b>

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# Why is campaign assessment important?

- Maintaining high coverage of ITNs for populations in need ensures community-level protection from malaria vectors
- During ITN mass distribution campaigns, in some cases, households (HH) do not receive any ITNs or receive an incorrect number of ITNs, leading to lower than expected ITN coverage
- Visits to HHs are the best way to see if the main objective of the campaign has been achieved

**ITN campaign assessments measure the quality of HHR and ITN distribution and support decision-makers to improve the quality of key ITN campaign activities, supporting improved ITN access and use**

# ITN campaign assessment objective

- The overall objective of assessing ITN campaign activities is:

To determine if the campaign has achieved the desired level of performance in a given area in order to take corrective action as needed, either during or after implementation of activities

**The M&E sub-committee should further identify country-specific objectives**

# Campaign assessment outputs

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Provides near-real-time valid data to ITN campaign staff

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Identifies areas where additional activities (HHR, ITN distribution, SBC) are needed because targets were missed (In-process)

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Establishes whether HHs have correctly received and understood key ITN campaign information

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Reduces the likelihood of errors or inconsistencies during HHR

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Provides information early in the campaign process to identify and address issues (In-process)

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# Identifying ITN campaign assessment approach

AMP recommends that national malaria programmes consider both:

- In-process assessment approach **and**
- End-process assessment approach

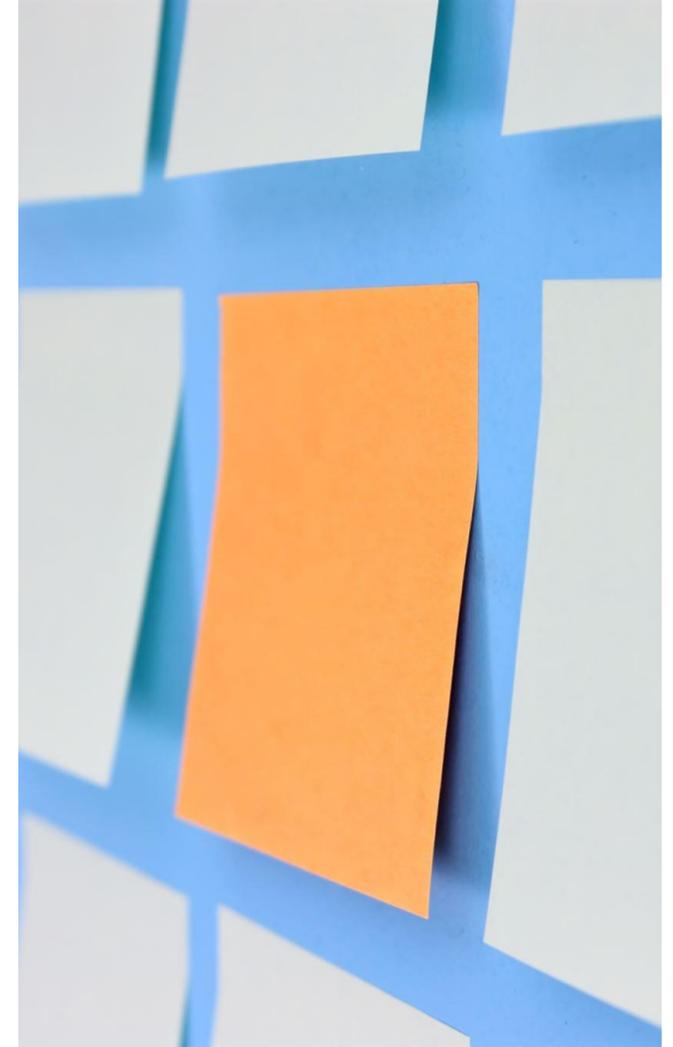
Where resources are limited - the M&E sub-committee will need to consider each option and select the assessment which best supports campaign quality.

# Review of terminology

- **Single-phase campaign:** Campaign approach where distribution takes place at the same time during a door to door visit or immediately after registration at a fixed site.
- **Double-phase campaign:** Campaign approach featuring two household (HH) visits: first visit to the HH to conduct HHR and either a second visit or fixed site for ITN distribution.
- **In-process assessment:** Assessment conducted during HHR and/or ITN distribution activities
- **End-process assessment:** Assessment conducted after ITN campaign activities have been completed or after specific phases.

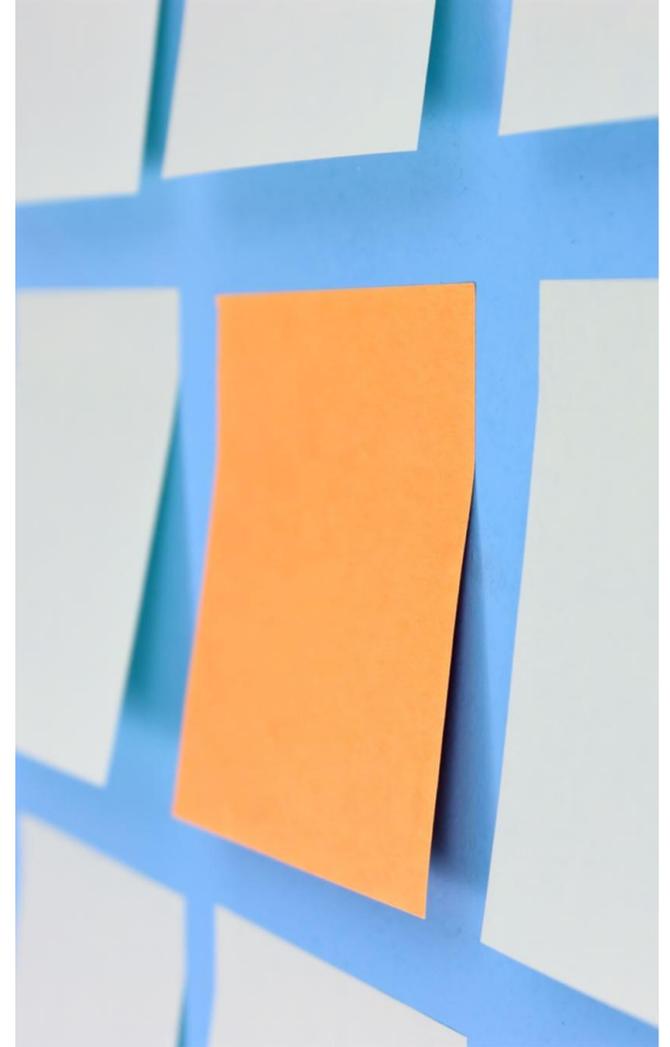
# In-process assessment approach

- Conducted during activity implementation and designed to flag potential programmatic issues for further investigation and action during the HHR and/ or ITN distribution process
- **Timing:** For campaign activities <7 days , assess during initial 2- 4 days. For activities 8-15 days, assess during initial 5-7 days
- The most important is the first 2 days of data collection on day 2 and day 3 of HHR or distribution



# End-process assessment approach

- Provides a means to validate achievement of key campaign activities and is conducted at the end of the implementation of a campaign phase or all campaign activities, with results and lessons learned used to inform future plans
- **Timing:** Start within three to five days of the last day of HHR and/or ITN distribution activities



# Several methods may be used to assess HHR and ITN distribution

- Simple random sampling
- Convenience sampling
- Easy access group sampling
- Purposeful sampling
- Random digit dialling
- Fixed percentage sampling
- Multi-stage probability sampling cluster surveys
- “Classic” lot quality assurance sampling (LQAS)
- **“Clustered” LQAS**

*More information: [choosing tools and methods for assessment of the quality of household registration for ITN distribution campaigns](#)*

# Clustered Lot Quality Assurance Sampling (cLQAS)

Procedures for assessing the quality of Insecticide-Treated Net (ITN) mass distribution campaign household registration and ITN distribution activities using cLQAS

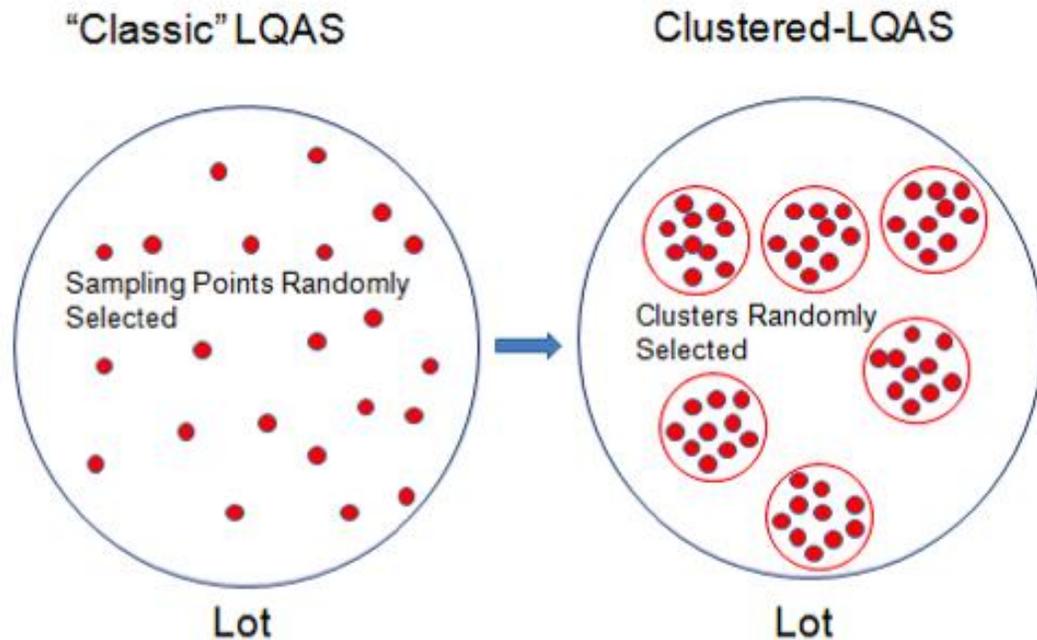
# Clustered Lot Quality Assurance Sampling (cLQAS)

- Used globally and successfully to assess a specific set of key indicators for polio vaccination campaign outcomes, even in remote and insecure settings
- More practical and less costly and balances potential bias, practicality, and cost
- Adopted from the Global Polio Eradication Initiative (GPEI) Field Manual, Assessing Vaccination Coverage Levels Using Lot Quality Assurance Sampling (LQAS)
- cLQAS approaches and elements have been used by several countries to conduct assessments of their HHR and ITN distribution activities as part of ITN campaigns (for example Benin, Cameroon, Central African Republic, Liberia, Nigeria, Sierra Leone)
- Note: This material is found in Step Four in the Procedures for ITN Campaign Assessment, pages 22-33. Link: <https://allianceformalariaprevention.com/resources/assessment-procedures/>

# “Adjusted cLQAS”: What we added beyond the polio eradication model

- Questionnaire has ITN and SBC related items, including ITN use
- Different strategies to get to the village level – list and area (e.g., segmentation) sampling methods
- Use more than one indicator to classify performance (5 indicators)
- Use non-bivariate indicators to classify performance. Mixed indicators based on "by person" vs "by HH"
- Use summary table comparing performance by lot/district
- Calculation of point estimates and confidence intervals for all levels (province, region, national) above the lot/district level

# What is clustered LQAS



- **LQAS:** rapid survey method to assess the quality of coverage following a health intervention in pre-defined areas such as health districts or sub-districts (i.e. lots) using a small sample size. Traditionally, LQAS has been used with a simple random sample design
- **cLQAS:** similar to random survey sampling, divides the sample ( $N$ ) into smaller clusters ( $k$ ) of  $n$  individuals, where  $N=k \cdot n$ . For example, six villages would be selected first and then 10 individuals in each village, rather than randomly selecting 60 individuals throughout the district ( $N=6 \cdot 10$ )
- **LQAS/cLQAS** classifies units (lots) into two or three categories (e.g. good, uncertain, inadequate)
- At higher levels (national, province), point estimates (of coverage) and confidence intervals can be calculated

The procedures guidance document is focused on cLQAS

# cLQAS key terms

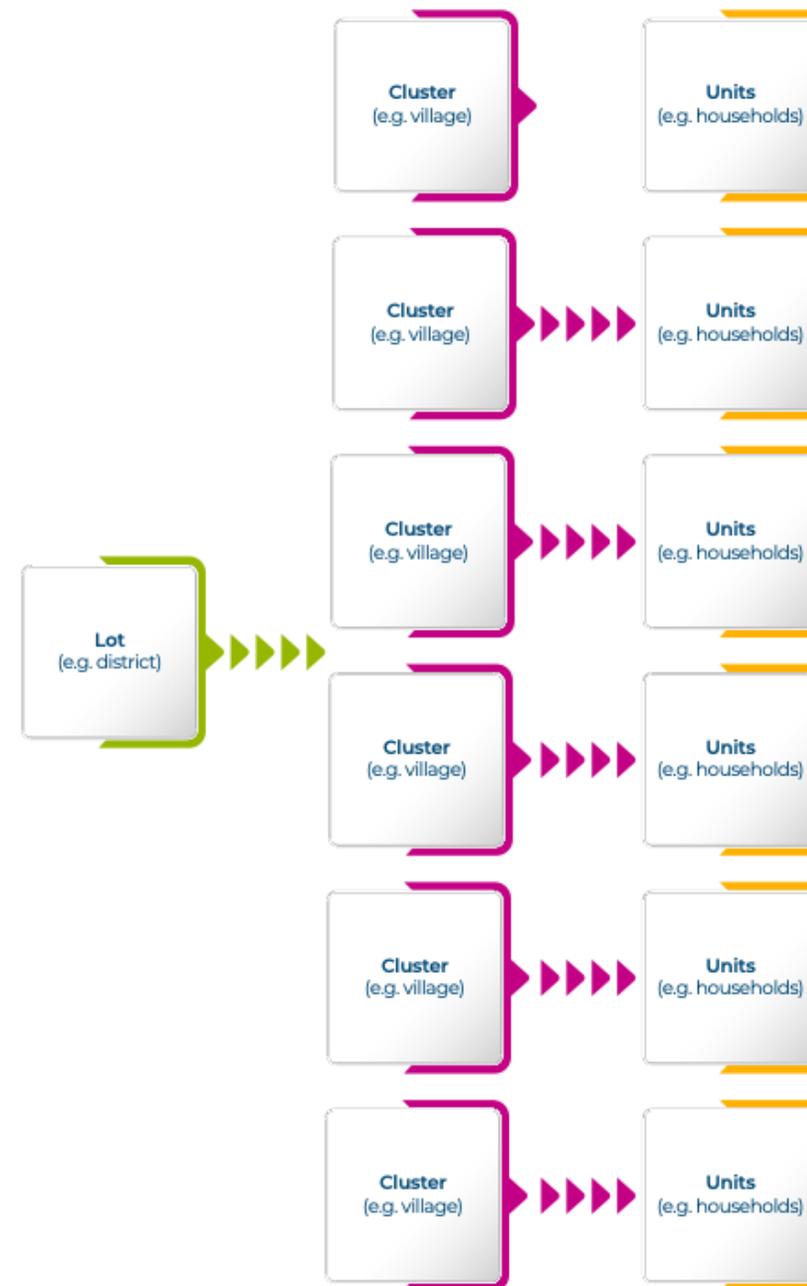
Sampling is used to choose a representative subset of areas covered by the ITN campaign. Sampling units used in cLQAS include:

**Lot:** Usually an administrative area, such as a district, sub-district, health area or zone, or health facility catchment area. Each lot includes multiple smaller administrative units, or clusters

**Cluster/PSU:** A collection of sampling units (HHs) (for example, communities, villages, census enumeration areas, health facility catchment areas, sub-districts, etc.) with defined geographical or administrative boundaries

**Sampling unit:** The unit of selection in the sampling process; typically a HH in a settlement (Note the operational definition of a household as used in the campaign)

Figure 2: Example of sampling units



# cLQAS key terms cont'd;

**Sampling frame:** A list of names, places, or other items that defines the strata and lots in a survey

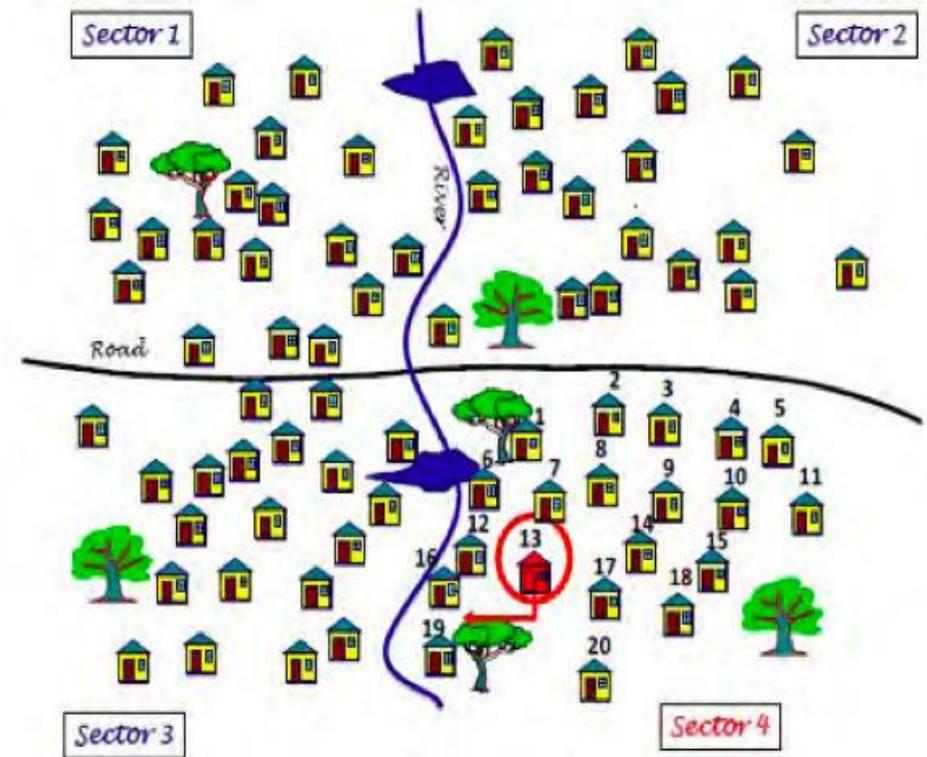
**Simple random sampling (SRS):** type of probability sampling in which the researcher randomly selects a subset of elements from a list.

**Probability proportional to size (PPS):** Sampling method that gives a higher probability of selection to larger clusters. One result of PPS is that each household has an equal probability of selection

# Selecting clusters x households (6x10, 60 households)

- 6x10 means that you randomly select 6 clusters from a list of clusters and then randomly select 10 HHs per cluster
- 6 clusters and 60 households is the minimum to be able to classify a lot area
- For programmatic and feasibility reasons, a fixed sample size of 60 HHs divided into six (6) clusters of 10, which allows lots to be classified has been selected

**Figure 3:** Example of segmentation and random HH selection. Image adapted from WHO. Assessing Vaccination Coverage Levels Using Lot Quality Assurance Sampling: Field Manual. GPEI, 2012.



# Classification and decision rules

- Classification of areas (lots) in terms of pre-defined benchmark
- Classify lots using three levels of classification:
  - **GOOD** ( $\geq 90\%$ )
  - **UNCERTAIN** (80-89%)
  - **INADEQUATE** ( $< 80\%$ )
- Range for classification can be decided based on pragmatic objectives and targets
- Decision rule: purpose to reduce misclassification errors e.g.
- LQAS decision rules (+5%) higher than the lower limit of the class range (for the "good" and "uncertain" classes)

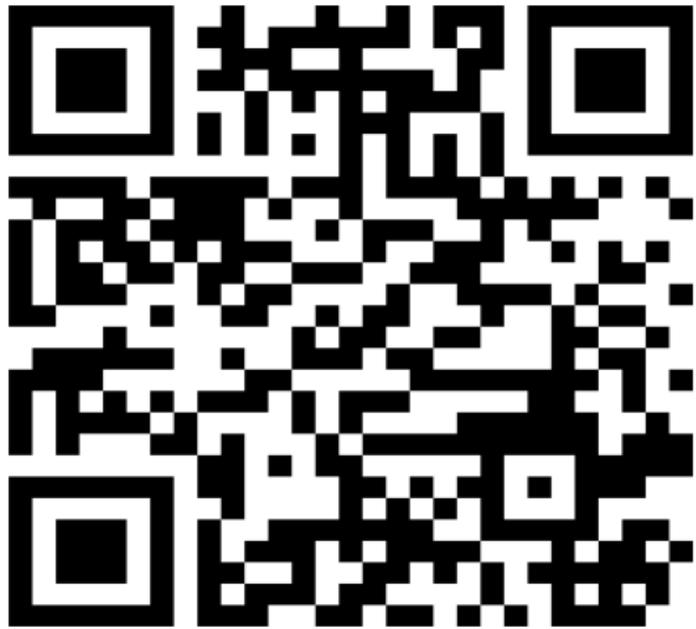
Summary table, Area 1

Classification of Lots, Five Main Indicators, End-Process cLQAS, ITN Mass campaign, late 2021, Area 1						
Name of Lots	At least 1 ITN	Correct	Pop. Access	Use, total	Use < 5yo	Average
	90/80	90/80	90/80	90/80	90/80	90/80
Lot 1	100%	97%	98%	100%	100%	99%
Lot 2	100%	87%	100%	100%	100%	97%
Lot 3	100%	90%	98%	98%	99%	97%
Lot 4	99%	91%	96%	96%	95%	95%
Lot 5	100%	79%	91%	99%	100%	94%
Lot 6	100%	90%	98%	87%	82%	91%
Lot 7	99%	92%	96%	81%	86%	91%
Lot 8	99%	75%	93%	88%	98%	91%
Lot 9	100%	71%	95%	96%	90%	90%
Lot 10	95%	71%	95%	95%	89%	89%
Lot 11	100%	66%	90%	85%	97%	88%
Lot 12	96%	71%	87%	89%	91%	87%
Lot 13	99%	60%	81%	93%	99%	86%
Lot 14	96%	70%	83%	85%	93%	85%
Lot 15	96%	77%	93%	74%	69%	82%
Lot 16	100%	68%	88%	67%	74%	80%
Lot 17	100%	78%	95%	60%	64%	79%
Lot 18	90%	62%	83%	79%	79%	79%
Lot 19	98%	55%	93%	72%	72%	78%
Lot 20	100%	44%	78%	83%	84%	78%
Lot 21	95%	57%	89%	71%	73%	77%
Lot 22	93%	57%	83%	65%	81%	76%
Lot 23	88%	56%	71%	79%	81%	75%
Lot 24	92%	25%	78%	83%	84%	72%
Lot 25	100%	68%	84%	50%	52%	71%
Lot 26	92%	55%	87%	63%	47%	69%
Lot 27	87%	31%	77%	58%	61%	63%

# Q&A and discussion

[Q&A tracker](#)

# Participatory exercise 1



**GO TO [menti.com](https://menti.com)  
ENTER THE CODE  
42 08 58 3**

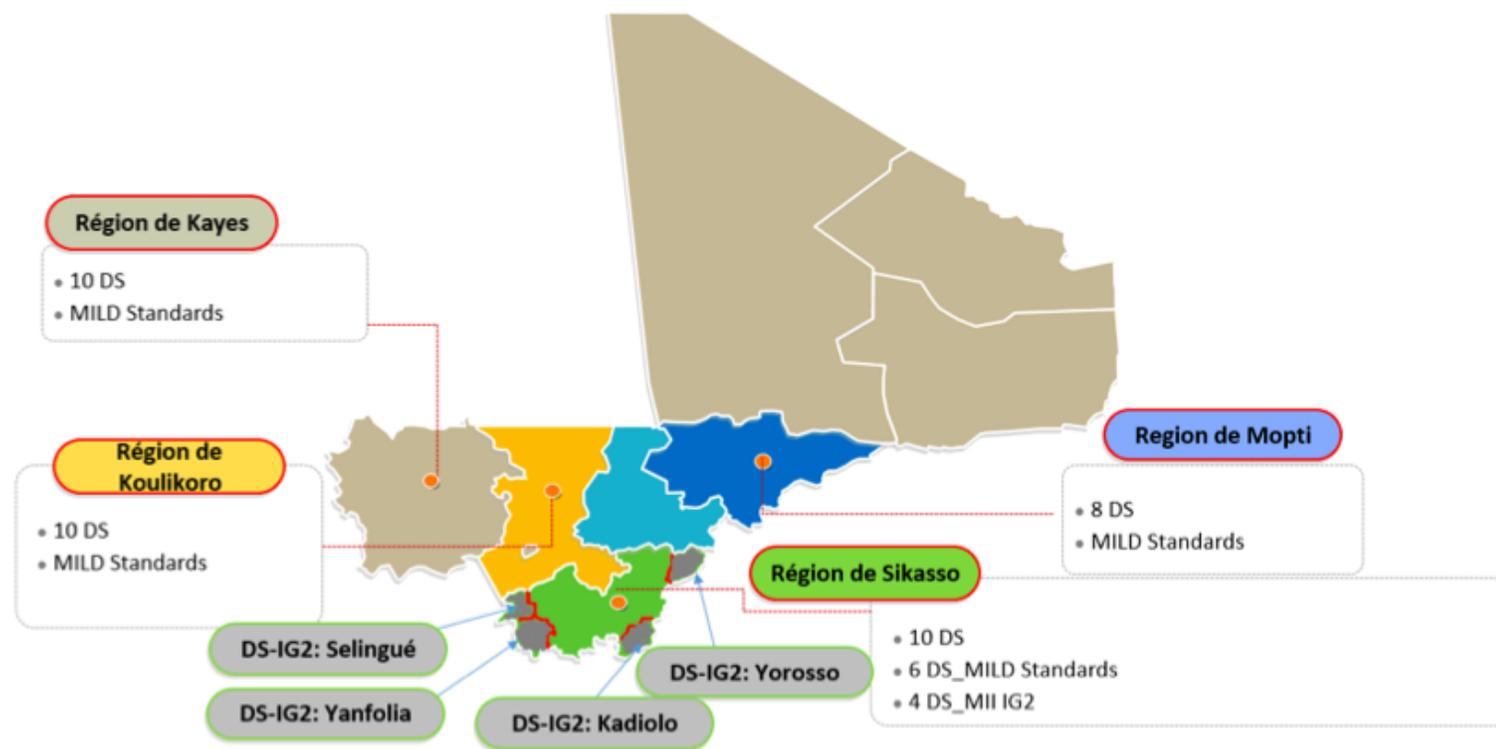
# cLQAS implementation

**Questions? Ask your facilitator via the Q&A**

# Sampling Step 1: Identify the sampling frame

•The areas in which the campaign was conducted

- For example, 20 districts, 5 provinces, one state, ...



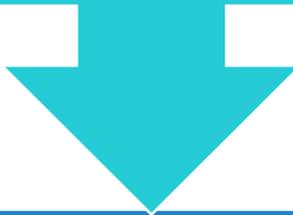
Map of Mali with the zones covered during the 2020 ITN campaign

## Sampling Step 2: Decide on level of classification (lot)

- After identifying the complete sampling frame, next identify an administrative level for which you want to classify units (lots) as "**good**", "**uncertain**", or "**inadequate**"
- This decision is influenced by budget, available time, and complexity.
- Countries usually use the district level or sub-district level as the lot, but could be the province level.

# Performance classification and results in cLQAS

Usually applies to end-process approaches



Two types of results are possible:

Performance classification: indicates the performance level as either good, uncertain, or inadequate.

Point estimate and confidence interval: provides a specific estimate with an associated range of values

# Performance classification at the "lot" level

1

LQAS and cLQAS uses performance classification at the "lot" level, such as district or sub-district level

2

Classification can be two-level (good, inadequate) or three-level (good, uncertain, inadequate)

3

cLQAS classification requires 60 HHs at a minimum (6 clusters of 10 HHs)

# Point estimate and confidence interval calculations e.g. 85% (CI 76-91%)

Classification levels beyond the specified level;

- Example 1: If classification level is sub-district, levels above may include district, province, and national
- Example 2: If classification level is district, levels above may include province and national

Point estimate and reasonable confidence interval (within +/- 10%) can be calculated at all levels above the classification level with  $\geq 200-300$  households and  $\geq 20-30$  clusters sampled.

At least 4 lots are required to calculate a CI (confidence interval), fewer than 4 lots are insufficient

Adjusted cLQAS provides both types of results: classification at a lower level and confidence intervals at higher levels.

# Sampling Step 3: Selection of clusters/PSU (1)

Done after sampling frame and level of classification decisions

The level of classification is called the "lot" level in cLQAS language

In each "lot" (example, district or sub-district), we will select 6 clusters\* and 10 HHs in each cluster

- This is often called 6x10 (6 by 10) sampling
- 6x10 is the minimum number of clusters and HHs for cLQAS
- If the lot level is the district, we would divide the district and select 6 clusters as the first step
- If the lot level is the sub-district, we would divide the sub-district and select 6 clusters as the first step

# Sampling Step 3: Selection of clusters/units (1)

Choose 6 PSUs (clusters) first



Clusters must be chosen using probability proportional to estimated size (PPS) method

Population is needed for each unit in order to do the PPS method

**ITN campaign  
assessment  
training**

**Formation à  
l'évaluation des  
campagnes MII**

**Break – Pause  
(10 minutes)**

We will return  
shortly

Nous reviendrons  
bientôt

# Sampling clusters in the lot (Selecting 6 clusters)

PPS community list sampling

# PPS method of selecting clusters/units

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Method used in the selection of units (clusters)

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Based on measure of size (population)

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Must have a full list of units/catchment areas and their population

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PPS avoids need for weighting. **In contrast, if using simple random sample (SRS) of units, must do weighting (using population) during analysis**

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A little more difficult than simple random sampling

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To eliminate bias this should be best done at a higher level

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PPS cluster selection (spreadsheet) lists need to be sent to higher level to use during analysis

# PPS “list” sampling



- If district or sub-district is lot level, can use list of villages

## Other options

- If district is lot level, can use list of sub-districts
- If district or sub-district is lot level, can use list of enumeration areas
- If district or sub-district is lot level, can use list of health facility catchment areas

# PPS list sampling steps - Example for selecting clusters/units - village list

1. List of communities with population in spreadsheet. Calculate the cumulative population
  - Add variable/column called "cumulative population"
  - Calculate cumulative population for each community
2. Record number of clusters (6 in AMP cLQAS)
3. Find "interval"
  - Divide the total population by the number of clusters (6): this is the "interval".
  - In this example, total population of 30 villages is 26,712 divided by 6 is 4,452
4. Choose starting point number.
  - Using simple random sampling, choose random number between 1 and the interval number (4,452).
  - In this example, 879 was randomly selected
5. Choose the first cluster where the random number 879 is included in the "cumulative population" between villages 1 and 2
6. Choose remaining clusters
  - Choose cluster 2 by adding the interval number (4,452) to starting point number.
  - Choose cluster 3-6 by adding the interval number (4,452) to the previous number.

*Note: The selection of clusters/units should be calculated in advance of cLQAS implementation*

**(1)** List sub-units and unit of size (population, HHs, etc.)

Calculate the cumulative population		
Name	Population (or HHs)	Cumulative population or HHs
ADO JAMEL	550	550
AMINU	1,435	1,985
ANGWAN NJIDD	375	2,360
ANGWAN PAMPETE	789	3,149
ANGWAN YAYI	930	4,079
ABADOGO	1,201	5,280
ABANUM	437	5,717
ABANUWA	550	6,267
ABBARI	663	6,930
ABBASKO	776	7,706
ABRAKA	889	8,595
ADANA OKPAI	1,002	9,597
ABU GARI	1,115	10,712
ABUEDO	1,228	11,940
ABUSHI	1,341	13,281
ACHALLA	1,454	14,735
ACHIKA	1,367	16,102
ABDURRAHMAN SADE	1,280	17,382
ADA BIOSAH STREET	1,193	18,575
ADAFIA	1,106	19,681
ADAGBRASSA ELUME	1,019	20,700
ADAHRO	932	21,632
ADAKAWA	845	22,477
ADALAWA	758	23,235
ADAMU MAGAJI	671	23,906
ADO JAMEL	584	24,490
ADOBU	497	24,987
ADUWA	536	25,523
ADUWAGO	575	26,098
AGANIKE	614	26,712
<b>TOTAL</b>	<b>26,712</b>	

**(2)** Record number of clusters (6- in AMP cLQAS)

Number of clusters (PSU) = 6

**(3)** Find "interval"  
Divide the total population by the number of clusters (6)

•Sampling Interval =  
sum of population/no.  
of clusters (6)

• $26,712/6 = 4,452$

Calculate the sampling interval		
Name	Population (or HHs)	Cumulative population or HHs
ADO JAMEL	550	550
AMINU	1,435	1,985
ANGWAN NJIDD	375	2,360
ANGWAN PAMPETE	789	3,149
ANGWAN YAYI	930	4,079
ABADOGO	1,201	5,280
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ADAKAWA	845	22,477
ADALAWA	758	23,235
ADAMU MAGAJI	671	23,906
ADO JAMEL	584	24,490
ADOBU	497	24,987
ADUWA	536	25,523
ADUWAGO	575	26,098
AGANIKE	614	26,712
<b>TOTAL</b>	<b>26,712</b>	

## (4) Select random starting point

- Using simple random sampling, choose random number between 1 and the interval number (4,452).
- In this example, 879 was randomly selected.

Calculate the sampling interval		
Name	Population (or HHs)	Cumulative population or HHs
ADO JAMEL	550	550
AMINU	1,435	1,985
ANGWAN NJIDD	375	2,360
ANGWAN PAMPETE	789	3,149
ANGWAN YAYI	930	4,079
ABADOGO	1,201	5,280
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ADO JAMEL	584	24,490
ADOBU	497	24,987
ADUWA	536	25,523
ADUWAGO	575	26,098
AGANIKE	614	26,712
<b>TOTAL</b>	<b>26,712</b>	

Identify 1st cluster community			
Name	Population (or HHs)	Cumulative population (or HHs)	First cluster location
ADO JAMEL	550	550	
AMINU	1,435	1,985	879
ANGWAN NJIDD	375	2,360	
ANGWAN PAMPETE	789	3,149	
ANGWAN YAYI	930	4,079	
ABADOGO	1,201	5,280	
ABANUM	437	5,717	
ABANUWA	550	6,267	
ABBARI	663	6,930	
ABBASKO	776	7,706	
ABRAKA	889	8,595	
ADANA OKPAI	1,002	9,597	
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ADA BIOSAH STREET	1,193	18,575	
ADAFIA	1,106	19,681	
ADAGBRASSA ELUME	1,019	20,700	
ADAHRO	932	21,632	
ADAKAWA	845	22,477	
ADALAWA	758	23,235	
ADAMU MAGAJI	671	23,906	
ADO JAMEL	584	24,490	
ADOBU	497	24,987	
ADUWA	536	25,523	
ADUWAGO	575	26,098	
AGANIKE	614	26,712	
<b>TOTAL</b>	<b>26,712</b>		

**(5)** Identify 1st cluster community, where the random starting point is contained in that villages cumulative population column

**(6)** Identifying remaining 5 clusters by adding the "interval" (4542) to the random starting point number

Identifying the remaining 5 clusters	
Cluster	Cluster location
Cluster 1 (starting point)	879
Cluster 2 (starting point + interval)	5,331
Cluster 3 (add interval)	9,783
Cluster 4	14,235
Cluster 5	18,687
Cluster 6	23,139

Identify the location of each of the 6 clusters				
Name	Population (or HHs)	Cumulative population (or HHs)	"Hit" from Step 6 cluster list.	"Hits" from the cluster list
ADO JAMEL	550	550		
<b>AMINU</b>	<b>1,435</b>	<b>1,985</b>	<b>879</b>	<b>Cluster 1</b>
ANGWAN NJIDD	375	2,360		
ANGWAN PAMPETE	789	3,149		
ANGWAN YAYI	930	4,079		
ABADOGO	1,201	5,280		
<b>ABANUM</b>	<b>437</b>	<b>5,717</b>	<b>5,331</b>	<b>Cluster 2</b>
ABANUWA	550	6,267		
ABBARI	663	6,930		
ABBASKO	776	7,706		
ABRAKA	889	8,595		
ADANA OKPAI	1,002	9,597		
<b>ABU GARI</b>	<b>1,115</b>	<b>10,712</b>	<b>9,783</b>	<b>Cluster 3</b>
ABUEDO	1,228	11,940		
ABUSHI	1,341	13,281		
<b>ACHALLA</b>	<b>1,454</b>	<b>14,735</b>	<b>14,235</b>	<b>Cluster 4</b>
ACHIKA	1,367	16,102		
ABDURRAHMAN SADE	1,280	17,382		
ADA BIOSAH STREET	1,193	18,575		
<b>ADAFIA</b>	<b>1,106</b>	<b>19,681</b>	<b>18,687</b>	<b>Cluster 5</b>
ADAGBRASSA ELUME	1,019	20,700		
ADAHRO	932	21,632		
ADAKAWA	845	22,477		
<b>ADALAWA</b>	<b>758</b>	<b>23,235</b>	<b>23,139</b>	<b>Cluster 6</b>
ADAMU MAGAJI	671	23,906		
ADO JAMEL	584	24,490		
ADOBU	497	24,987		
ADUWA	536	25,523		
ADUWAGO	575	26,098		
AGANIKE	614	26,712		
<b>TOTAL</b>	<b>26,712</b>			

**(6)** Identify remaining 5 clusters by adding the "interval" to the random starting point number

# PPS Scenarios

## If district is lot level and has a clear list of villages

- then use the PPS “list” method to select the clusters

## If district is lot level and does not have a clear list of villages

- then choose 6 of 10 or more *sub-districts* as the clusters
- or, choose 6 of 10 or more *health facility catchment areas* as the clusters
- or, choose 6 of 10 or more *enumeration areas* as the clusters



# Q&A and discussion

[Q&A tracker](#)

## Participatory exercise 2

- Please find a list of settlements/villages in District A. District A is a lot. Settlement/village is the level of the Primary Sampling Units (PSU)/Clusters. Using your knowledge about AMP clustered LQAS, select the number and identify the clusters that are needed.
- [Worksheet Exercise 2](#)
- See link in chat box

# Participatory exercise 2

## Step 1. List of villages (sub-units), size (populative), and identification of the 6 clusters

Name	Population (or HHs)	Cumulative population or HHs	"Hit" from Step 6 cluster list.	"Hits" from the cluster list.
ANGWAN PAMPETEL	549	549		
ANGWAN YAYI	469	1,018		
ABADOGO	480	1,498		
ABANUM	919	2,417		
ABANUWA	977	3,394		
ABBARI	391	3,785		
ABBASKO	712	4,497		
ABC BREAD LINE	865	5,362		
ABDALLAWA	657	6,019		
ABDULKARIMU KOFAN GAB	155	6,174		
ABDULLAHI SANI	885	7,059		
ABDULMUMINI USMAN	329	7,388		
ABDURRAHMAN SADE	994	8,382		
ABRAKA	971	9,353		
ABRAKA 1	974	10,327		
ABU GARI	509	10,836		
ABUEDO	553	11,389		
ABUSHI	857	12,246		
ACHALLA	166	12,412		
ACHIKA	650	13,062		
ADA BIOSAH STREET	603	13,665		

## Example: PPS List sampling of villages

STEP 1: List sub-units and unit of size (population, HHs, etc.)		STEP 4: Select random starting point (between 1 and the "interval")		STEP 6: Chose remaining 5 clusters by adding the "interval" to the random starting point number	
See list below.		Random starting point number		Cluster 1 (starting point)	
				Cluster 2 (starting point + interval)	
				Cluster 3 (add interval)	
				Cluster 4	
				Cluster 5	
				Cluster 6	
STEP 2: Record number of clusters (6 in AMP cLQAS)		STEP 5: Chose 1st cluster village, where the random starting point is contained in that villages cumulative population column			
Number of clusters (PSU) =					
STEP 3: Calculate the "interval": sum of population/HHs / no. of clusters (6)					
Total population (total of population column)					
Interval =					

# Selection of households (HH)

Next step after selection of cluster level

**Questions? Ask your facilitator via the Zoom chat.**

# Summary of next steps to choose HHs per cluster

01

Use “list sampling” (usually of villages) and equal segmentation of one village to select one final segment with ~20HHs (15-25 HHs)

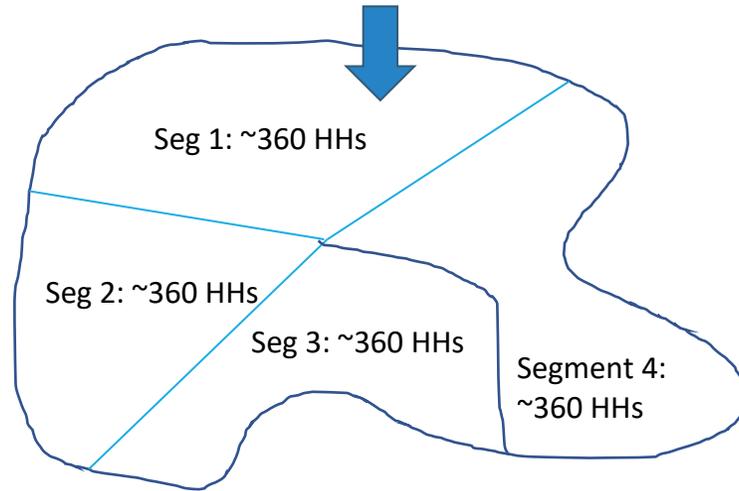
02

In the final segment, select one starting HH using simple random sampling from a map or list of the 15-25 HHs in the final segment. Call this HH #1

03

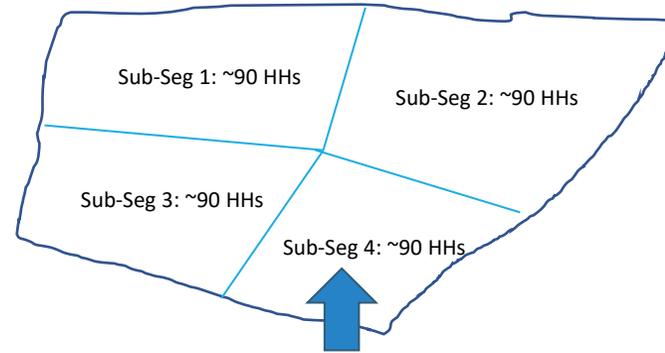
To select HH#2 to #10, use next nearest right door method

Round 1: 1440 total HHs in village.  
Make 4 segments of 360 HHs each



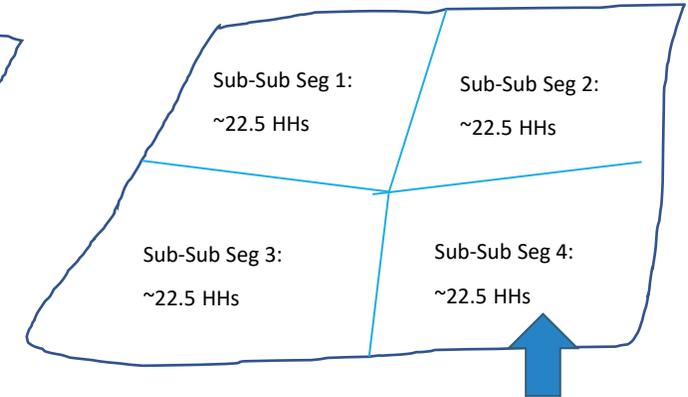
Choose one segment using simple random sampling from 1 to 4

Round 2: 4 segments of 90 HHs each



Choose one segment using simple random sampling from 1 to 4

Round 3. 4 segments of 22-23 HHs each



Choose one segment using simple random sampling from 1 to 4. Sub-Sub Seg 4 is randomly selected. Since 15-25 HHs, "4" is the final segment.

After selecting one village: three rounds of segmenting a village to identify the final segment

- Use maps (hand drawn or electronic) 1440 total HHs in the community in this example

## Note

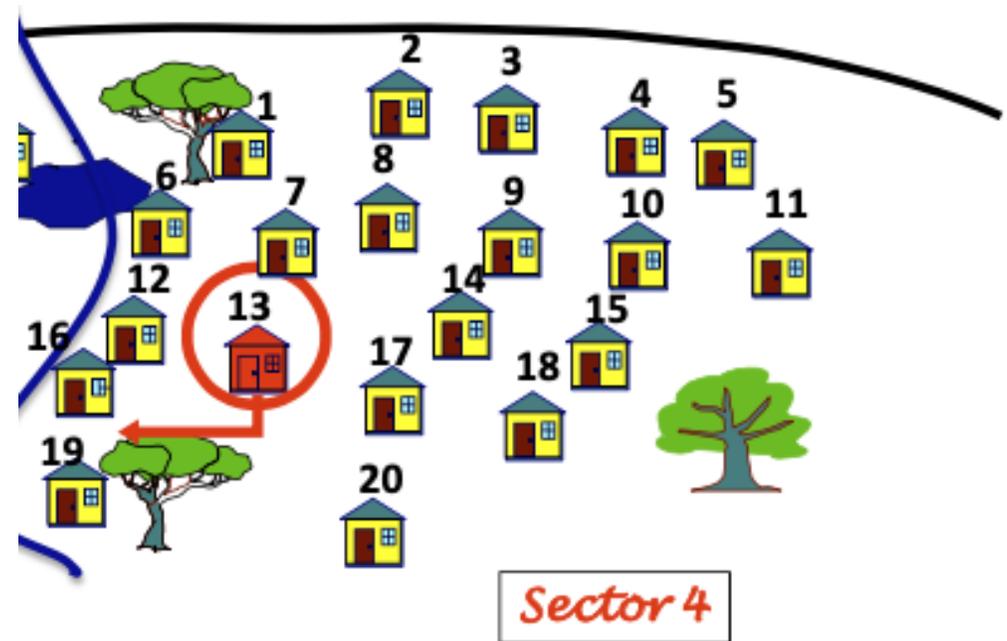
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If a selected segment is 25-45 HHs, you can divide by 2 or 3 instead of 4 to get 15-25 HHs as the final segment



# Selection of households

- This is done in the final segment
- Make a map of all HHs in the final segment (15-25 HHs)
  - The graphic to the right has 20 HHs
- Number each household
- Randomly choose first HH using [random number app](#)
  - In this example, HH #13 was chosen randomly



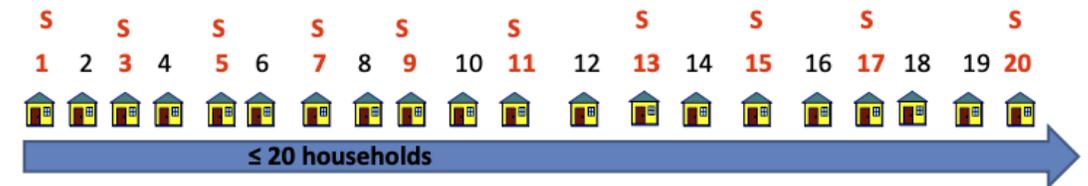
Graphics adapted from polio eradication cLQAS manual, 2012

# Selection of HHs #2-10

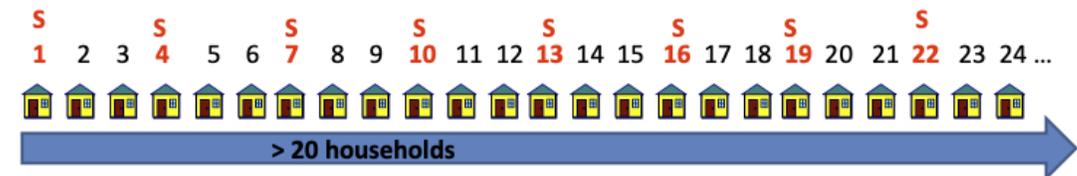
- Use next nearest (right) door method to select HHs #2-10 for interview
  - Rural area: selected every other HH
- Urban area, selected every 3<sup>rd</sup> HH

## *Interval Between Households*

Leave 1 household in the sectors of low density with 20 households or less (e.g. Rural areas):



Leave 2 households in the areas of high density with more than 20 households (e.g. Urban areas):



Graphics adapted from polio eradication cLQAS manual, 2012

# Selection of HH #11 to 12 if needed

- Each cluster needs at least 10 HHs with interview data
- If 1, 2, or more HHs in the cluster were not at home or refused interview, select additional HHs (#11, #12, etc.) to replace them using same method
- Record data about HHs with missing data (not at home, refused) on the paper recording form or mobile data collection app
  - This information is used to calculate weights to adjust for missing HH data



## Participatory exercise 3

- In one of the clusters (village) selected through PPS there are approximately 1,000 households. **Describe and/or draw the steps you would take to identify households 1-10;**
  - Select final segment (15-25 HHs) using equal size segmentation
  - Choose the first HH
  - Choose HHs #2-#10

# Day 1 wrap-up exercise

**Thank you for  
participating today**

To wrap up, please take a  
moment to reflect on  
today's session



**GO TO [menti.com](https://www.menti.com)  
ENTER THE CODE  
8413 0557**



# Thank you

Expanding the ownership and use of mosquito nets