

# Operational Control

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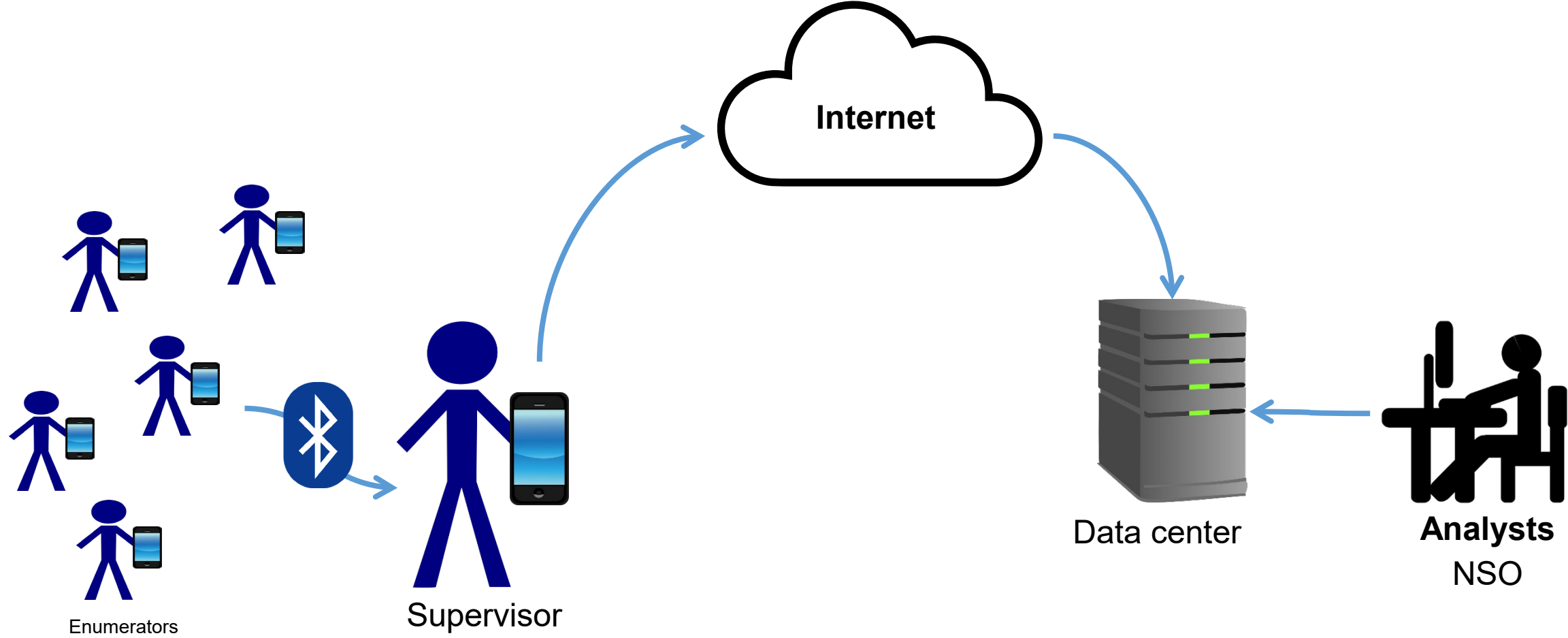
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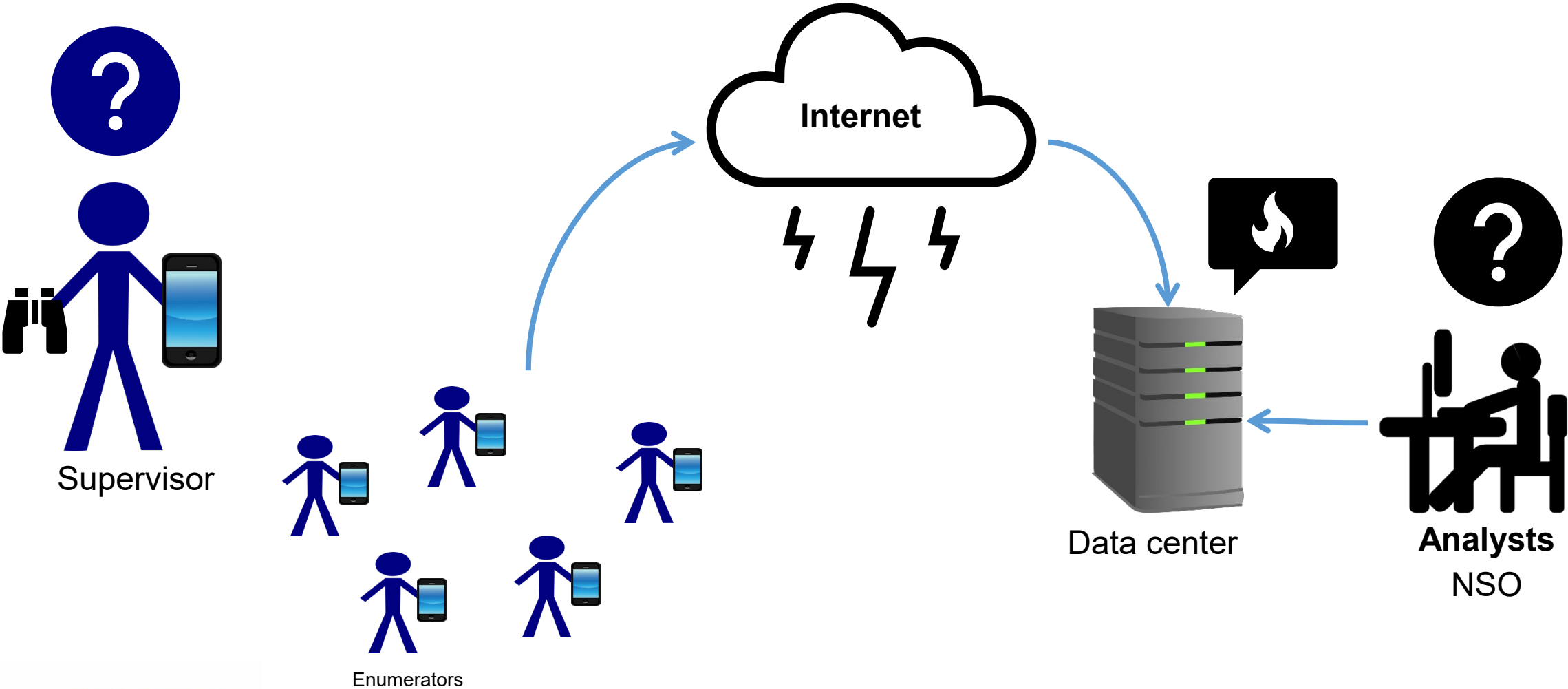
# Overview

- Data transfer in CAPI and the role of supervisors
- Operational control in CAPI
- Paradata
- Quality Metrics for US Census 2020
- Logistics
  - Local office infrastructure
  - Tablet distribution
- Security

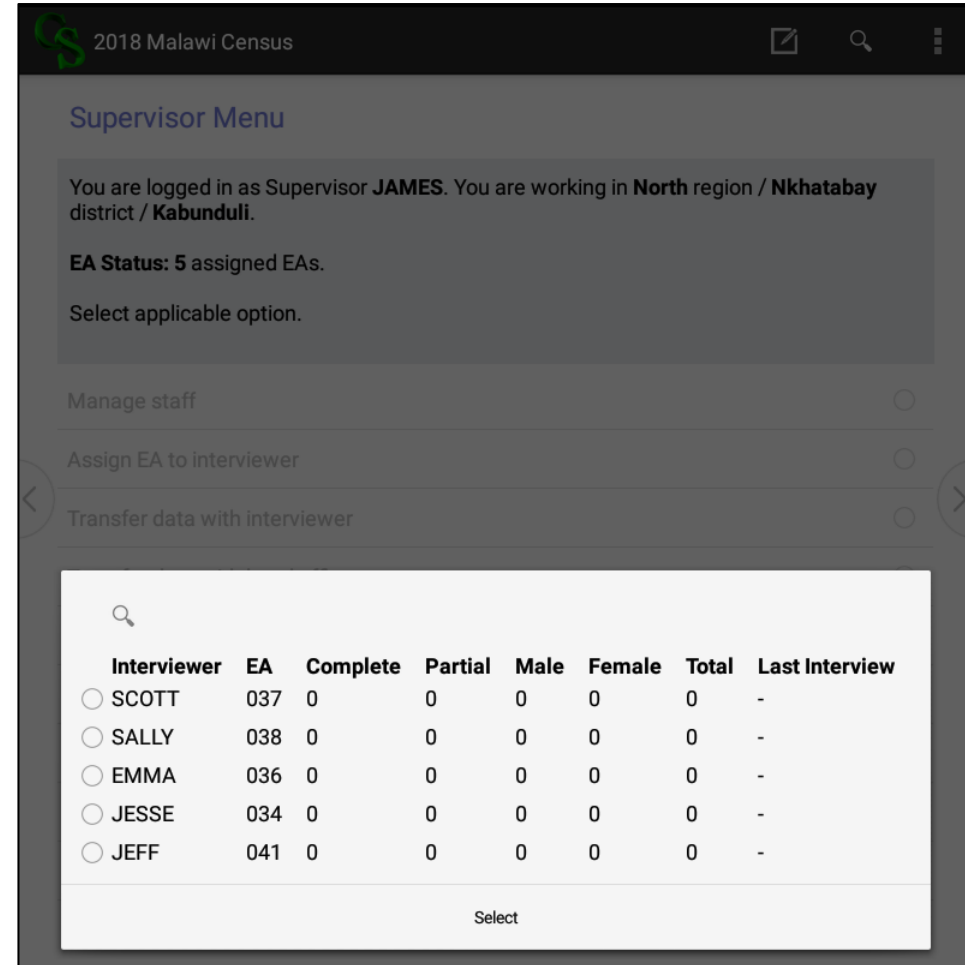
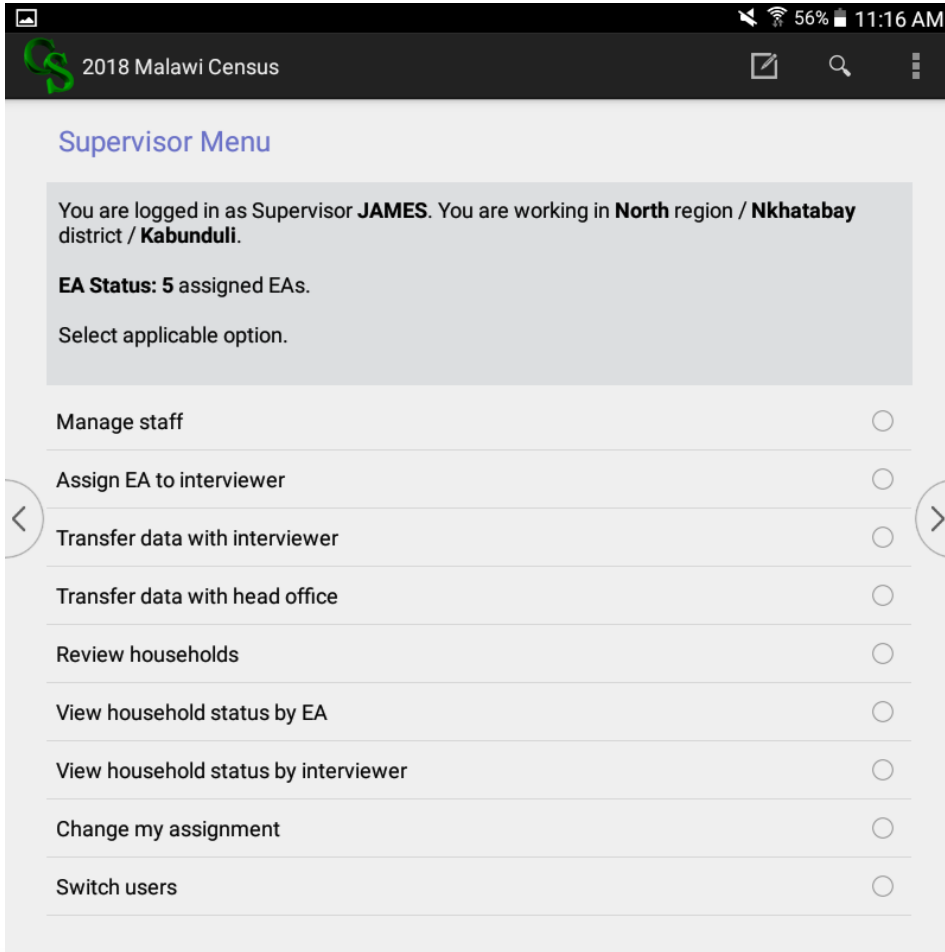
# Data transfer in CAPI



# Data transfer in CAPI



# Case Management: Supervisor



# The important role of the supervisor in the verification of data

- The role of the supervisor is to verify the collection of data in the field, while having the opportunity to make changes that reflect the observed characteristics of individuals and households.
- No more than 5 enumerators are recommended for each field supervisor

# The important role of the supervisor in the verification of data

Using CAPI technology does NOT resolve all content errors.

- For example, enumerators may not include all household members, leaving women of childbearing age so they do not have to ask fertility questions.
- In Tanzania, an application was developed for the supervisor that allowed a random verification of households on the household roster and some other questions to compare them with the data obtained by the enumerator.
- Supervisors must accompany in some interviews at the beginning and end of the fieldwork to verify that the enumerators ask the questions correctly.

# The important role of the supervisor in the verification of data

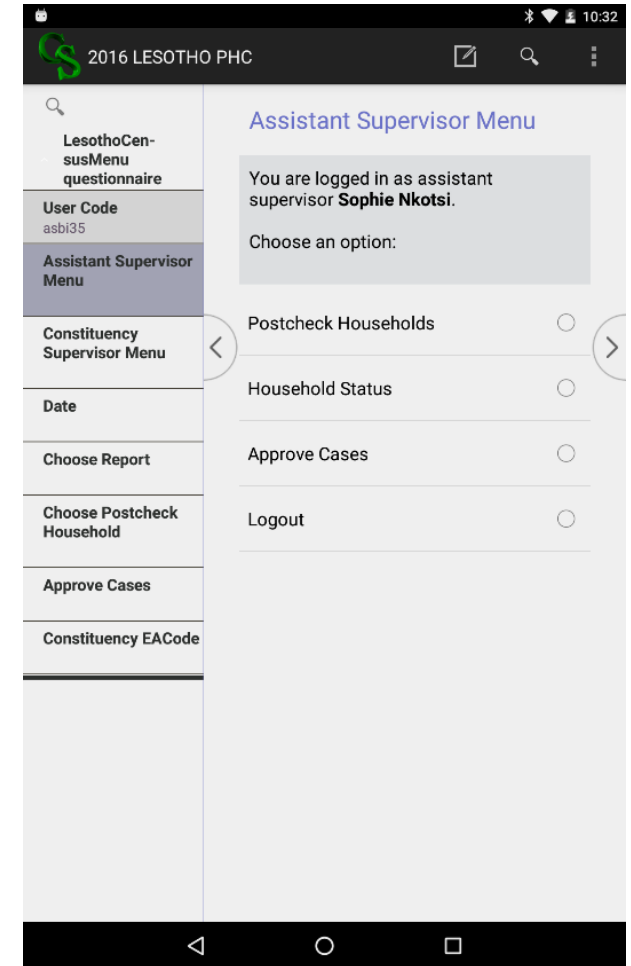
- It is recommended that supervisors transmit the data to the central server, after performing assigned checks, and making sure the enumerator has resolved the inconsistencies and omissions detected.
- Consistency checks help at the editing stage, but they **DO NOT REPLACE** the role of the supervisor in ensuring data quality.

IT IS EASIER AND BETTER TO CORRECT INFORMATION IN THE FIELD,  
THAN LATER



# Assistant Supervisors

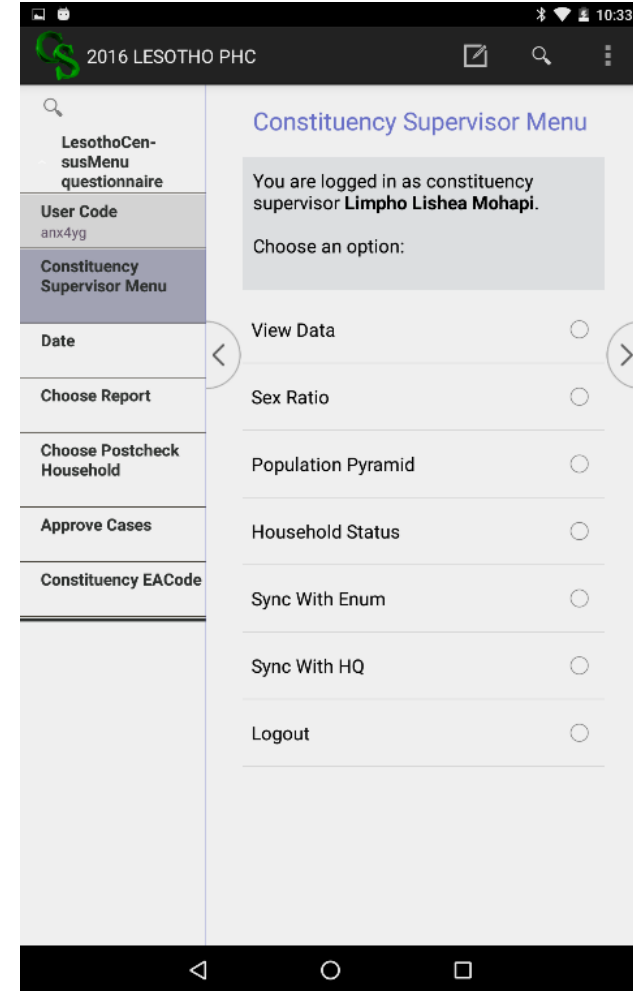
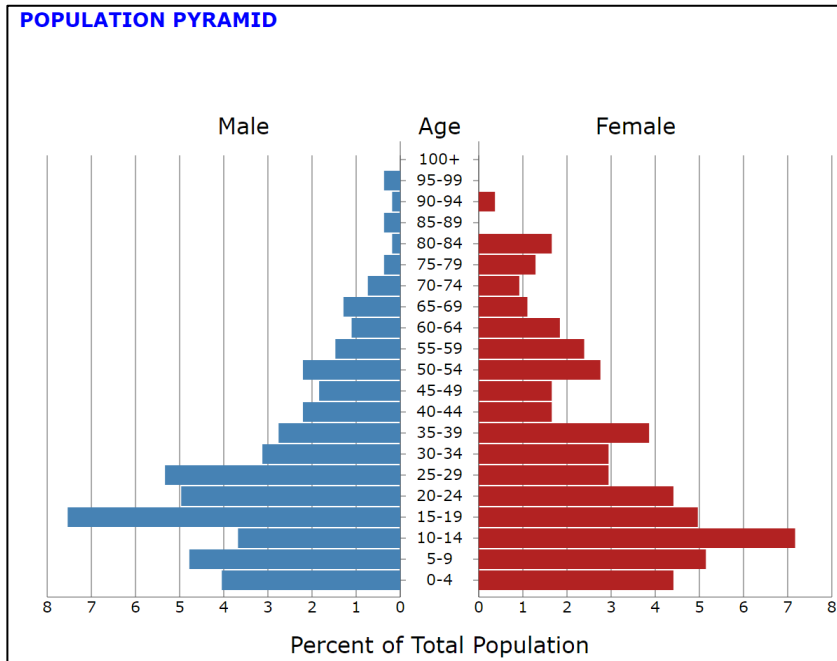
- Re-interviews with 5 households by EA
- Approval required for
  - vacant households
  - households with missing data on fertility



# Operational Control

## Constituency Supervisors

- Reviewed reports on data quality



# Defining paradata

- Paradata: "data about the process by which survey or census data was collected."
- CSPro produces paradata that could include:
  - information about the fields and values entered
  - error messages found
  - the status of the data collection device
- Paradata can be collected for data entry or editing applications.
- Paradata processing is flexible and can be used simultaneously by multiple applications or users.

# Use of paradata

- If you conduct a census or pilot survey, you may find it useful to collect paradata across devices.
- By analyzing these data, you may be able to improve and streamline operations for the actual census or survey.

# Use of paradata (cont.)

You can use paradata to answer questions about app or devices:

- Which questions in my survey take the longest to collect?  
Should I change the wording of the question to simplify it?
- What out-of-range values are interviewers entering?  
Should they be valid values?
- Which error messages are triggered most often?
- Where were the interviewers located at any given time?
- How long did the interviewers work?
- Which tablets had the best battery life?

# Operational Quality Metrics

## US Census 2020

- Quality and Transparency
  - Sharing what we know, when we know it.
  - Releasing information and metrics on data quality on an earlier schedule.
  - Engaging external expert groups.
  - Exploring additional quality assessments.
    - Assessments: volumes, rates and costs for operations or processes
    - Evaluations: analyze, interpret and synthesize the effectiveness and efficiencies of census components

# Operational Quality Metrics

## US Census 2020 – Public Release 1 (April 26)

- Final resolution of addresses by data collection operation
  - Self-response, Nonresponse Followup (NRFU), Group Quarters, Other operations, or Unresolved (went to count imputation)
  - Occupied, vacant, delete
- Self-response resolution by mode: Internet, paper, telephone
- NRFU resolution by respondent type and housing unit status
  - Occupied, vacant, delete
  - Household member, proxy (such as a neighbor or landlord), or administrative records
- Metrics also available for 2010 census data for comparison

# Operational Quality Metrics

## US Census 2020 – Public Release 2 (May 28)

- Average occupied household size by data collection operation
  - Self-response, Nonresponse Followup (NRFU), Other operations, or Unresolved (went to count imputation)
- Percent one-person and two-person households by data collection operation
  - Self-response, Nonresponse Followup (NRFU), Other operations, or Unresolved (went to count imputation)
- Housing unit status by data collection operation
  - Distribution of how occupied housing units were enumerated
  - Distribution of how vacant housing units were enumerated



# Operational Quality Metrics

## US Census 2020 – Public Release 3 (Aug 28)

- Item nonresponse rates for redistricting data items
  - Population count, age or date of birth, Hispanic origin, race
- All occupied housing units
- Self-response occupied housing units
  - All self-response
  - By self-response mode (internet, paper, telephone)
- NRFU occupied housing units
  - All NRFU
  - By respondent type (household member, proxy, administrative records)
- Other operations
- Group quarters
- Population count only (by operation)



# Logistics

From headquarters to the enumerators and back to headquarters

- HQ: load, test and tag (w/bar code inventory) each tablet
- Distribution procedures -> HQ -> Regions -> Field offices
  - Transportation
  - Device inventory
  - Field office: storage space
    - Security
    - Good conditions for store electronics: cool and dry
    - Access to a number of power outlets
  - Development of control forms in CAPI within the supervisor menu
    - Track information for every unit in the EA listing.

# Logistics in PAPI

In paper operations each enumerator is given a **number of questionnaires**. Each paper questionnaire should have an ID number.

At the end of data collection **every questionnaire needs to be accounted for**: completed interviews, incomplete interviews, rejected interviews, vacancy units, and blank questionnaires.

Supervisors use the **distribution log and questionnaire IDs** to track each paper questionnaire and avoid errors (for example filling out questionnaires for inexistent households).

# Logistics in CAPI

In CAPI operations each enumerator is given a **tablet**. Each tablet must have a bar code.

At the end of data collection **every tablet needs to be accounted for**.

Supervisors use the **app to track progress in data collection for EAs**. They track the status of interviews for each unit in the listing.

# Data security

- What is data security?
- Why is data security important for CAPI operational success?
- How do you think about data security as you develop procedures and consider control devices and systems?
- What practical considerations should be taken into account?

# Environmental Safety Considerations

- Do I have procedures and safeguards to minimize:
  - Accidents?
  - Fire?
  - Environmental hazards to equipment, facilities and personnel?
- What kind of conditions should I anticipate in the field?

# Environmental safety

In the office, consider:

- Fire Safety
- Heating/Cooling and ventilation
- Stable electrical service
- No smoking, eating, drinking around the equipment

In the field, consider:

- Device durability
- Availability of spare parts
- Field tests



# Questions about physical security

- Are we addressing physical security?
- Do we understand the risks in the transport and distribution of devices?
- Do we have "loss tolerance"?
- Do we have inventory control?

# Physical security in the field

In the field:

- Risk estimation
- Who is working for you?
- Device protection procedures
- Theft/loss
- Mitigating desirability
  - Biases

During interviews:

- Take into account:
  - Unsafe places
  - Security Risks
- Considerations:
  - Interviewer procedures
  - Risk mitigation plan