

Protocol for Audio Data Sorting at the Butabika Call Center

1. Purpose

This protocol outlines the data sorting procedure for telephone call recordings from Butabika Hospital's PBX system. The exercise focuses on labeling global (non-clinical) audio metadata, and is conducted exclusively on-site. The goal is to structure the data for future clinical and research annotation.

2. Scope

The sorting task applies to the WAV audio files currently stored on the PBX system. Labeling will be done manually in Excel by listening to each audio file. This protocol strictly prohibits the use of laptops, USB drives, external transfers, or internet-based file sharing. All work must remain within the Butabika Call Center PBX environment.

3. Parameters for Sorting

Each annotator will annotate the following five parameters. The *FileName* column will be filled by copying the exact name of each audio file from the folder, without modification.

- **File Name:** The exact name of the audio file in the assigned folder. This should be copied directly into the spreadsheet.
- **Caller Sex:** Indicates the perceived gender of the caller based on cues such as voice, name (if mentioned), or statements made during the call (e.g., “I am the wife of the patient”). Use *Unclear* if the caller’s sex cannot be confidently determined (e.g., poor audio, child’s voice, no speech). Annotators must explain “Unclear” cases briefly in the Comment column.

- Expected values: **Male, Female, Unclear**

- **Caller Purpose:** Describes the primary reason for the call.

Expected values:

- Related to mental health patient diagnosis
 - Other health condition
 - Other query
 - Administrative inquiry (e.g., hospital procedures, admission rules)
 - Appointment-related (e.g., scheduling, confirming reviews)
 - Seeking services (e.g., treatment options, lab, referrals)

- Other: Include clarification in the Comment column if this option is selected.
- **Caller Type:** Classifies who is making the call. If the speaker refers to themselves in the first person (e.g., "I have a problem"), they are likely the patient. If they refer to someone else (e.g., "My son is unwell"), they are likely a caregiver. Callers may include: Patient (calling about their own condition), Caretaker (parent, spouse, sibling, etc.), Community member (concerned citizen reporting a case), Healthcare provider (for consultation or calling on behalf of a referred case), Unknown (caller role not clear from conversation).
Expected values:
 - **Patient**
 - **Caretaker**
 - **Community member**
 - **Healthcare provider**
 - **Institutional representative:** Someone calling on behalf of an organization, e.g., school, church, NGO, workplace, etc.
 - **Law enforcement:** Police or security calling to report or refer to a person experiencing a mental health issue.
 - **Hospital staff** (non-clinical): Administrative or support staff from a health facility calling for logistics, follow-up, or coordination.
 - **Student / Intern applicant:** Calling to inquire about school admissions, internship opportunities, or academic programs.
 - **Unknown.**
- **Patient Status:** Indicates whether the person being discussed is already in mental health care or not. This is inferred from statements like being on medication, attending reviews, or still being in the community. Expected values:
 - **In care at a Hospital**
 - **Under care elsewhere**
 - **Not under care**
 - **Unclear**
 - **Referred for admission**
 - **Re-admission after defaulting**
 - **Other:** must include clarification in the Comment column if this option is selected.
- **Language:** Identifies the dominant language spoken during the call. Labelers will assess whether the language is primarily Luganda, English, or a combination. Expected values:

- **Luganda**
 - **English**
 - **Luganda-English**
 - **Runyankore**
 - **Lusoga**
 - **Luganda-Lusoga**
 - **Luganda-Runyankore**
 - **English-Runyankore**
 - **Unclear:** Select if language is unknown to annotator
 - **Other:** must include the actual language(s) used in the Comment column.
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- **Call Quality:** Rates how clear and understandable the call is, taking into account poor network conditions or background noise. For example, if speakers cannot hear each other well due to noise or signal issues, the rating will be lower.
 - Expected values: **Likert scale from 1 (very poor), 2 (poor), 3 (Fair), 4 (Good), or 5 (excellent).**
 - If the **Call Quality** is poor, and the annotator feels they can still understand the call well enough to complete the other parameters, they may continue.
 - If the audio is too unclear to proceed confidently, they should stop and write a short note in the Comments column explaining the issue e.g audio is unclear.
- **Diagnosis If mentioned and/or symptoms:** Captures any diagnosis directly mentioned or symptoms reported during the call. Where possible, annotators should list diagnoses or infer likely conditions based on medications or detailed symptom descriptions.
 - Expected format: Comma-separated list of diagnoses and/or symptoms.
- **ReasonNotLabeled:** Indicates the reason why a call could not be labeled at all. This field should only be filled when the annotator is unable to complete any of the main fields (e.g., CallerSex, CallerPurpose, CallerType, PatientStatus, Language, CallQuality) due to limitations in the audio. Expected values:
 - **No recording** – The audio file contains no speech or is completely silent.
 - **System testing** – Caller is clearly testing the phone system; no real conversation or information.
 - **Very short call** – The call ends too quickly (e.g., under 3–5 seconds) to extract meaningful labels.
 - **Poor audio quality** – The audio is too noisy, distorted, or unclear to hear anything reliably.

4. Sorting Folder Structure and Process

4.1. Folder Setup (by PBX Engineer)

For each annotator (e.g., Ruth Neumbe):

- Create a main folder named: e.g **Ruth Neumbe**
- Create a subfolder named **Data**. This contains the assigned audio files.
- Create an Excel file named e.g **Ruth_data_sorting.xlsx**
 - This file should include the following columns: **FileName, CallerSex, CallerPurpose, CallerType, PatientStatus, Language, CallQuality, Diagnosis, ReasonNotLabeled, Comment**
 - The FileName column will be filled by copying the exact name of each audio file from the folder.
 - All fields with predefined options (CallerSex, CallerType, PatientStatus, CallPurpose, Language, CallQuality) should have drop-down menus in the Excel sheet to make selection easier and keep the entries consistent.

4.2. Sorting Environment

- Sorting will take place only on the desktop machine of the PBX system at Butabika.
- Labelers will work in their assigned folder.
- No files or spreadsheets may be transferred outside the PBX environment.

4.3. Sorting Method

- Each annotator opens their assigned Excel sheet and listens to the corresponding audio files in the data/ folder.
- He/she annotates each row based on what they hear.
- Any corrupted or blank files should be flagged in the “Comments” column.

5. Data Security & Compliance

- Strictly no copying, sharing, or emailing of audio or spreadsheet files.
- All sorting activities remain local to the hospital’s PBX desktop environment.