Medicines Access and Use in Districts Served by Accredited Drug Dispensing Outlets in Tanzania

Concept Paper and Work Plan

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I. Background

Since 2001, the MSH Center for Pharmaceutical Management has worked with Tanzania Food and Drugs Authority (TFDA) to establish the Accredited Drug Dispensing Outlet (ADDO) program in Tanzania.[1-3] The program aims to improve access to quality essential medicines and pharmaceutical services to underserved communities. The government of Tanzania has now rolled out the ADDO program in all 21 mainland regions with over 4000 ADDOs established and 9000 dispensers trained.

A number of assessments and routine monitoring visits have been conducted to monitor medicines use practices in the ADDOs.[4-8] These assessments have tended to look at individual components of medicines use, such as dispensing or care seeking behavior. None has taken a holistic view of the interrelationship between medicines and their sources in Tanzanian communities, combining consumer care-seeking and medicines use, public health facility prescribing and dispensing practices, ADDO dispensing practices, and stakeholder knowledge and attitudes about key issues related to medicines access and use.

The goal of the current activity is to conduct a holistic assessment of health care seeking behavior, medicines availability, medicines use, and stakeholder perceptions in communities served by ADDOs in Tanzania. This activity was described under Objective 3 in the SDSI proposal to the Gates Foundation as follows:

> *Objective 3. Define and characterize data elements related to consumer access to and use of medicines, quality of products and services provided by drug sellers, and government officials' and health care providers' and users' perception and knowledge regarding medicine use and AMR for use in developing public health policy, regulatory standards, and treatment guidelines.*

After discussions during a July 2012 meeting between the MSH and technical advisors from Harvard, the original SDSI objective has been proposed for revision into three sub-objectives as follows:

3.1 Design and conduct an in-depth assessment of community access and use of medicines and knowledge and perceptions of key stakeholders regarding medicine use and antimicrobial resistance (AMR).

3.2 Develop and demonstrate use of a cost-efficient strategy for ongoing monitoring of the quality of products and services provided in the ADDOs.

3.3 Build capacity of Tanzanian organizations to continue data collection, analysis, and use for ongoing policy development and regulatory purposes.

This document outlines the components of a proposed two-stage approach to achieve the third objective of the Sustainable Drug Seller Initiative (SDSI). The initial draft was written in preparation for the September 2012 stakeholder meeting that brought together the SDSI partners to discuss and agree upon the Objective 3 work plan. This revision incorporates

changes in methods that were agreed upon during the stakeholder discussions. Additional changes will be incorporated as the implementing partners finalize methods for individual assessment components.

II. Evaluation and Monitoring Approach

The in-depth cross-sectional assessment will combine four linked surveys:

- A multi-component survey of medicines prescribing, availability, and dispensing in public and private health facilities, pharmacies, and ADDOs;
- A survey of medicines access and use by households and AMR knowledge and perceptions among survey respondents;
- A survey of perceptions, knowledge, and attitudes of ADDO dispensers and government stakeholders at central, district, and ward levels, regarding ADDOs, medicines access/use, health insurance, and AMR;
- A characterization of the quality of products available during the surveys in ADDOs and pharmacies.

The overall design and specific methodologies used in this assessment take into account the potential for cost-efficient longer-term monitoring of practices in ADDOs. Wherever possible, the components of the assessment will be linked to programmatic activities of the collaborating government partners who are working with SDSI: the Tanzania Pharmacy Council (PC), Tanzania Food and Drugs Authority (TFDA), and the Pharmaceutical Services Section (PSS) of the Ministry of Health and Social Welfare, as well as the implementing partners, which include Management Sciences for Health, Apotheker Consultancy Ltd., INRUD Tanzania, the Schools of Pharmacy and Public Health at the Muhimbili University of Health and Allied Sciences (MUHAS), the Tanzania Consumer Advocacy Society (TCAS), and the Invention and Technological Ideas Development Organization (ITIDO). The future role in ongoing assessment and monitoring by other organizations such as ADDO associations and community-level advocacy groups will be defined separately based on the results of the cross-sectional assessment.

A strategy for future ADDO monitoring will be informed by the experience and lessons learned from this cross-sectional assessment. Working with PC, TDFA, and PSS, the ADDO monitoring strategy will be implemented, evaluated, and revised for handover to the appropriate government organizations in SDSI project Year 3. Those activities will be handled separately.

III. Cross-sectional Assessment

Survey components of the cross-sectional assessment are designed to collect information about community access and use of medicines, as well as community and key stakeholder knowledge and perceptions about medicines use and AMR. Proposed key questions to be answered during the assessment are stated in terms of the four main evaluation targets (ADDOs, health care facilities, government stakeholders, and community) and listed in Annex 1. Final questions will incorporate input from the collaborating partners and the results of pilot testing of survey instruments.

The cross-sectional assessment will be conducted in 12 districts that span a range of geography, wealth, experience with ADDOs, and public health facility infrastructure.

1. Sample Selection

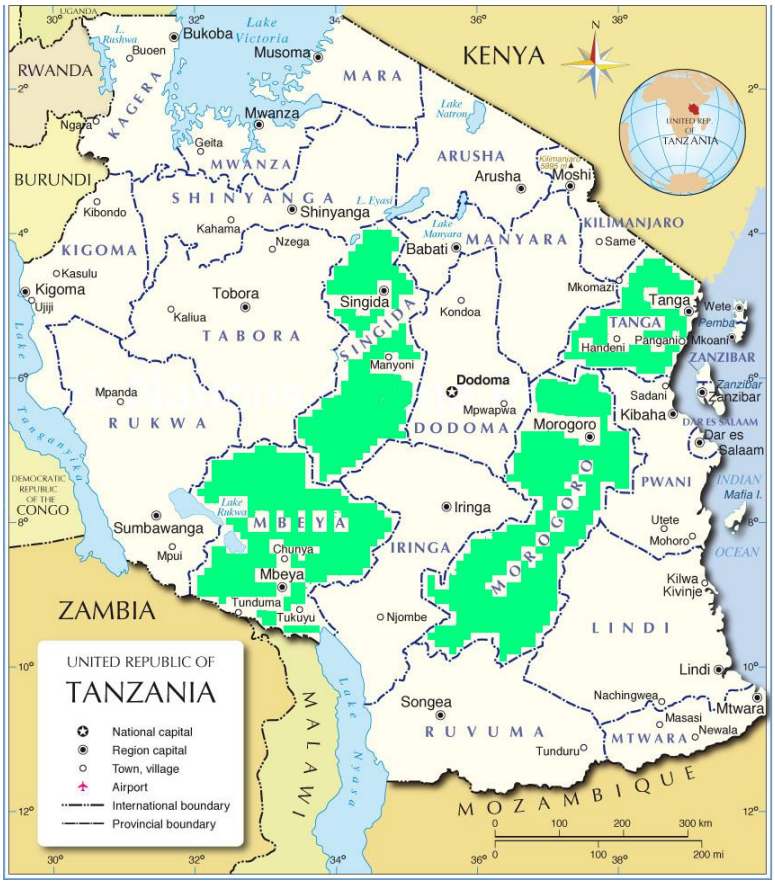
The facilities, households, and individuals included in this assessment will be sampled in 4 regions that were purposively selected based on their:

- Geographic location and accessibility;
- Socio-economic range;
- Experience with ADDOs (i.e., regions in which the ADDO program was implemented prior to 2006, between 2006 and 2010, or after 2010).

The assessment regions will include:

1. Morogoro: eastern region, mature ADDO region
2. Tanga: northern region, ADDOs in operation for 2 years
3. Mbeya: southern highland region, ADDOs 2-3 years, relatively high SES;
4. Singida: central region, relatively poorer, 10-12% CHF penetration, with historical data (site of previous household survey in 2009-2010)

Figure 1: Proposed Regions for Assessment of Medicines Access and Use



The methods to sample districts, wards, health facilities, pharmacies, ADDOs, villages, and households for the study are described below. Specific details and selection probabilities for

the district and ward samples are listed in Annex 2. In each assessment region, the survey sample will include the following:

- **3 districts selected per region** (n=12) with probability proportional to district population size
- **Wards in each sample district divided into 3 strata based on the number of ADDOs in the ward:**
  - High density wards with 5 or more ADDOs (except in Singida, where high density wards were defined as 3 or more ADDOs)
  - Low density wards with 1-4 ADDOs (except Singida, where low density wards have 1-2 ADDOs)
  - Wards with no ADDOs
- **5 wards selected per assessment district** (n=60), with probability proportional to ward population size within the 3 ADDO density strata in each district:
  - 2 wards from each high ADDO density stratum, except in Singida Rural which has only 1 high density ward (n=23)
  - 2 wards from each low ADDO density stratum (n=24)
  - 1 ward without ADDOs, except in Singida Rural where 2 wards without ADDOs were selected (n=13);
- **24 ADDOs per district will be randomly selected in the field (n=96)** from up-to-date lists of ADDOs functioning at the time of the survey, as follows:
  - 3 ADDOs randomly selected in each high ADDO density ward (n=69)
  - 1 ADDO randomly selected in each low ADDO density ward (n=24)
  - 3 additional ADDOs selected in low density wards in Singida Rural (whether part of the ward sample or not) in order to bring total in the Singida to 24 ADDOs.
- **Up to 2 private pharmacies per district** (n=up to 24), chosen randomly from all pharmacies present in the assessment districts
- **1-2 public health care facilities per ward** (n=84) plus up to 12 additional district hospitals if they are not otherwise selected, chosen randomly as follows:
  - 2 health facilities per ward in high ADDO density wards (total n=48)
    i) 1 public hospital (if any public hospital is present in the ward)
    ii) Up to 2 primary health care centers (if a public hospital is not present but 1+ primary health care centers are present)
    iii) Up to 2 dispensaries (if no public hospitals or <2 primary health care centers are present in the ward)
  - 1 health facility per ward in low ADDO density and no ADDO wards (n=36)
    i) 1 public hospital (if any public hospital is present in the ward)
    ii) 1 primary health care center (if a public hospital is not present but 1+ primary health care centers are present)

iii) 1 dispensary (if no public hospitals or primary health care centers are present in the ward)

- If the district hospital has not been selected for the sample by this process, then it will be included in the sample as an additional health facility

- **Up to 1 faith-based facility per district** (n=up to 12), chosen randomly from all mission facilities present in the assessment districts
- **20 households per ward** (total n=1200, with 720 located close to an ADDO and 480 located far from any ADDO), selected by methods described in the MUHAS School of Public Health field manual that will be implemented during the survey:
  - High density and low ADDO density wards (total n~720 households located close to an ADDO and n~240 households located far from any ADDO):
    i) All villages in the ward will be grouped into two strata located: (1) close to an ADDO (within 5 km) and (2) far from an ADDO (>5 km)[1]
    ii) Villages within each stratum selected with probability proportional to village population size, if possible, or alternatively, selected with equal probability
    iii) 5 households selected randomly in each of 3 villages chosen in the close-to-ADDO stratum (n=15 per ward)
    iv) 5 households selected randomly in one village located far from any ADDO stratum (n=5 per ward)
  - No ADDO wards (total n=240 located far from any ADDO)
    i) All villages in the ward will be grouped into two strata containing those located (1) close to the ward population center (within 5 km) and (2) far from the ward population center (>5 km)[2]
    ii) 5 households selected randomly in each of three villages chosen in the close to the ward population center stratum (n=15 per ward)
    iii) 5 households selected randomly in one village located far from the ward population center (n=5 per ward)
  - Criteria for selecting the individual households in each village included in the sample will be specified in the MUHAS School of Public Health field manual using a procedure designed to minimize within-village clustering

The respondents in each health facility, ADDO, and household, and the focus of the survey in each location, are summarized in Table 1.

[1] If no villages in the ward lie more than 5 km from an ADDO, such as in a ward in a densely populated urban area, the criterion for far from an ADDO should be adjusted to identify a stratum containing roughly 20%-25% of the ward population living as far as possible from any ADDO

[2] If no villages in the ward lie more than 5 km from the population center, the criterion for far from the population center should be adjusted to identify a stratum containing roughly 20%-25% of the ward population living as far as possible from the population center

TABLE 1: SUMMARY OF SAMPLES AND RESPONDENTS

Sample Domain	Number Included	Survey Topics
ADDOs	• 8 ADDOs per district • 1-2 key respondents per ADDO (shop owner and shop dispenser, if these are different people)	ADDO utilization; quality of services; medicines availability and price; sources and quality of products; antibiotic prescribing and dispensing; knowledge about AMR; interactions with local health facilities; experience with NHIF reimbursements
Private pharmacies	• Up to 2 pharmacies per district (if available in district) • 1 key respondent: Pharmacist	Roles of pharmacy and ADDOs in the community; interactions with district authorities and CHF (if applicable in the district); sources and quality of products; medicines availability and price; antibiotic prescribing and dispensing; knowledge about AMR; experience with NHIF reimbursements
Public health facilities	• 7-8 public health facilities per district, including one public health facility per assessment ward plus the district hospital if not otherwise selected • Up to 3 respondents per facility: Medical Officer in-charge, Pharmacist in-charge, and Accountant • Up to 30 patients presenting for care at each facility on the day of the survey	Utilization of health services and quality of services provided; medicines availability and price; antibiotics prescribing and dispensing; interactions with and perceptions about ADDOs; training on rational use and infection control and prevention; knowledge about AMR; management of NHIF/CHF patients
Faith-based facilities	• Up to 1 faith-based facility per district (if available in district) • 1 key respondent per facility: Medical Officer in-charge	Utilization of health services and quality of services provided; medicines availability and price; antibiotics prescribing and dispensing; interactions with and perceptions about ADDOs; training on rational use of medicines and infection control; knowledge about AMR; management of NHIF/CHF patients
Households	• 100 households per district • 1 respondent per household selected according to WHO criteria[9]	Care seeking; recent use of medicines and locations obtained; medicines at home; opinions and experiences in accessing care and medicines in ADDOs and health facilities; practices that impact AMR; perspectives about CHF
Central administration	• 2 respondents from TFDA: Director General and Director of Medicines and Cosmetics • 2 respondents from PC: Registrar, Head of Pharmacy Practice • 2 respondents from PSS: Chief Pharmacist, Officer in charge of rational use of medicines • 4 respondents from NHIF: Director General, NHIF pharmacist, CHF Coordinator, person in charge of ADDO reimbursement	Role in ADDO administration and management; medicines financing and supply with focus on antibiotics; perceptions about AMR; existing AMR activities, coordination, training programs; monitoring of antimicrobial use; membership, structure and functioning of NHIF/CHF; perceptions about NHIF-ADDO linkage and potential for CHF linkage.
District administration	• 4 respondents from district office: Executive Director, Council Chairman, Treasurer, and NHIF/CHF Coordinator • 3 respondents from the district health team: Medical Officer, Pharmacist, and Health Secretary	Key issues about community health services; perceptions about role and quality of services at health facilities, pharmacies, and ADDOs; budget for medicines and ADDO activities; existence of STGs; monitoring of antibiotic prescribing and dispensing; AMR surveillance.

2. Data Sources and Tools

The information about community access and use of medicines and about community and stakeholder perceptions and knowledge about medicines use and AMR will be collected using a variety of survey tools. Annex 3 provides overviews of the locations, methods, respondents, types of data to be collected, and responsible partners for the four linked surveys comprising the cross-sectional assessment.

ADDOs

Simulated customer visits

Prior to the ADDO visits by the Apotheker/INRUD teams, TCAS will select a sample of 25 ADDOs in each of the 12 districts to receive mystery shopper visits. In Singida Region, where there are currently only 59 ADDOs listed, all ADDOs will be included, and the sample in Morogoro District expanded so that a **total of 300 ADDOs receive mystery shopper visits**. We will try to choose 300 ADDOs for the study—one per visit—but based on the number of ADDOs available in the study districts, mystery shoppers may have to make two visits to the same shop to achieve 300 visits total (e.g., if we 200 shops are available for the study, shoppers will visit 100 shops two times). These ADDOs will be identified by location and name so Apotheker can use the same selected pool to choose 96 ADDOs for the survey data collection; this will enable linkage between the two sets of data—simulated customer and survey. Each mystery shopper will simulate a different respiratory illness scenario occurring in a child: (1) a severe case of ARI, (2) a mild case of ARI, or (3) a customer requesting antibiotics for a respiratory infection. There will be 100 visits planned for each scenario. TCAS will extensively train the mystery shoppers, and the ADDO visit and data recording processes will be pilot tested prior to actual data collection. TCAS and Apotheker/INRUD will work together to ensure coordination in the field and to streamline the logistics for the mystery shoppers.

TCAS will work with MSH to produce detailed descriptions of each scenario, the field protocol for the simulated visits, and a mystery customer training plan. Existing ADDO Data Collection Forms will be adapted to capture key details about the simulated encounters.[11] Data from the visits will be collected on paper forms, *then* entered into computers, cleaned, and analyzed by TCAS. The mystery clients will be extensively trained, and the ADDO visit and data recording processes will be thoroughly pilot tested before actual data collection to ensure fidelity to the study scenarios, consistency across data collectors, and completeness of recording. No more than one simulated visit will be made to an ADDO in a given week.

Referrals

The second type of data collected in the ADDO survey will be retrospective data on referrals. Data collectors will first determine and document if the referral register is regularly used in the ADDO; if the register or an equivalent system is not used, data collectors should record the reasons why. In that case, the dispenser should be asked to estimate how many customers were referred in the previous month.

If some type of referral register is in use, data collectors should record the total number of referrals over the past 3 months. In addition, they should record dates, demographics, symptoms, and place of referral for the last 10 customers referred, if available.

Data on the number and types of referrals will be collected on tablet computers. The layout of the data collection forms will be developed by Apotheker /INRUD in collaboration with MSH and ITIDO.

Dispensing record review and general facility information

An additional component of the ADDO survey will be extraction of data from customer dispensing registers (Annex 4). The primary purpose of this data collection is to characterize the extent that dispensers collect data and what data they collect. Our objective is to provide information to enable the Pharmacy Council to revise the ADDO recordkeeping requirements to make it an exercise that is both feasible and useful. We are also interested to survey which and how many antibiotics are being dispensed for which particular condition. This will give us some idea of community drug use.

Data collectors will first determine and document if dispensing registers are available and in regular use in the ADDO. If not, they will record the reasons why registers are not used as reported by the dispenser, and also determine whether the ADDO uses another record system to collect dispensing data. If no suitable method for retrospective sampling of dispensing is available in a given ADDO, this survey component will be skipped in that ADDO. If the field supervisor determines that dispensing records are available in other ADDOs in the ward, one additional ADDO will be selected at random and added to the sample; all of the different types of ADDO data in the survey except the simulated customer visits will be collected in the additional ADDO. If dispensing records are not available in other ADDOs in the ward, no additional ADDO will be included in the sample.

If suitable dispensing records are available, data collectors will sample retrospective data on 40 ADDO customers treated with any antibiotic during the previous 3 months, as described in the study manual; if fewer than 40 customers treated with an antibiotic are identified in that time period, data collectors should continue to look back in the registers for up to one year prior to the survey. Sampling will be based on the WHO Level II methodology for sampling medical records[10] or another explicit sampling approach described by Apotheker/INRUD in their field manual. If available in the register, data will be recorded on whether the customer presented a prescription or not.

In addition to recording details of the 40 cases, data will be collected on the completeness of the registers. For the first customer data recorded on each of the 10 last completed pages of the current register, data collectors will document which fields have been filled out for each record: date, customer name, customer address, age, sex, illness/symptoms, generic name dispensed, dosage, and quantity dispensed of dispensed medicine. Each field will be recorded separately. This will give us an idea of which fields are easiest for the dispenser to routinely record.

In addition, the data collector will have a checklist of items regarding the store operation including: Is the ADDO open at the time of the visit? Is there a trained dispenser on duty? Is she wearing her white coat? Has the annual fee been paid?

Data for the dispensing record review and general information will be collected on tablet computers. The layout of the data collection forms for recording availability of dispensing registers, completeness of data in the registers, and the retrospective dispensing survey will be developed by Apotheker /INRUD in collaboration with MSH and ITIDO.

Availability and price of tracer medicines

Data collectors will enter data on availability, price, and volume of a set of tracer antimicrobials authorized to be sold in ADDOs, as well as a shorter list of antimicrobials that are not authorized to be sold. MSH has made a preliminary selection of 15 authorized antimicrobials and developed a draft data collection form (Annex 5); they will develop the list of unauthorized products in collaboration with assessment partners.

Data collectors will ask to see all of the products in stock for each medicine listed. The number of products in stock for each medicine will be defined as the number of products for which at least one full course of therapy is available. For the product with the greatest amount of stock available, data collectors will record information on brand name, manufacturer, registration status, expiry status, package size and price, and unit price.

Data on availability and price of tracer medicines will be collected on tablet computers. The final layout of the data collection forms will be developed by Apotheker /INRUD in collaboration with MSH and ITIDO.

Focus group discussions with ADDO owners and ADDO dispensers

Apotheker will work with a subcontractor to conduct focus group discussions in all 12 districts, inviting participants from the 96 study ADDOs to participate in groups of 6–10. We will also invite 2–4 additional ADDO owners/proprietors from the district center to assure a reasonable quorum. That should be a reasonable number of groups to elicit the range of opinion, and to be able to compare opinion to a certain extent across regions and across population density. The focus group facilitator and note-taker will work to elicit positive and negative feedback.

Topics will include monthly ADDO utilization; monthly revenues; knowledge about antibiotics and AMR; previous experience with supervision and inspections; experience with NHIF reimbursement process (if applicable); and training history and needs. In addition, the discussions will aim to get at dispensers' perceptions about prescribing and dispensing practices and what drives their behavior in this area. The preliminary set of topics to be discussed in the focus-group discussions can be found in Annex 6. The final list of topics and field protocol for the structured interviews will be developed by Apotheker and INRUD, in collaboration with MSH, TFDA, PC, and PSC, with input from the Gates Foundation.

Survey on medicines quality

For a small number of medicines, data collectors will purchase a predetermined number of units (minimum of 26 units). Products will be selected to represent first-line therapies on treatment guidelines for common conditions (e.g., adult and pediatric pneumonia, malaria, hypertension) or those with known quality problems.

MUHAS School of Pharmacy will develop a detailed protocol for the quality study in collaboration with TFDA and MSH. Data collectors will purchase specific products according to protocol (e.g., most commonly used, lowest price, specific manufacturers, etc.). The purchased products will be bagged, labeled, and stored in in accordance with established protocols, and then tested for specific quality parameters after the survey teams return to Dar es Salaam. Data identifying the date, ADDO, drug names, manufacturers, lot numbers, amounts, and cost of all products purchased will be recorded on paper forms developed by MUHAS School of Pharmacy, TFDA, and MSH.

Private Pharmacies

The assessment of private pharmacies will be limited to dispensing record review, survey on availability and price of tracer medicines, survey on medicines quality, and structured interviews of pharmacy owner and dispensers. The same data sources and tools used in the ADDO survey will be used to carry out these activities.

Public Health Care Facilities

Prescribing and dispensing record review

The retrospective review of prescribing and dispensing records in public health facilities will follow a similar protocol and sampling approach as the review of dispensing records in ADDOs. The health facility study will include 40 patients of any age treated for respiratory infections (ARI, URTI) in the previous 3 months; if fewer than 40 patients with respiratory illness are able to be identified during that time period, data collectors should continue to look back in the registers for up to one year prior to the survey. For each patient, data collected will include age, gender, insurance status, diagnosed health problem, name of medicines prescribed; and amounts of each medicine dispensed and their cost. Data will be collected on tablet computers. The layout of the data collection form will be developed by Apotheker /INRUD in collaboration with MSH.

Data will usually be extracted from primary care prescribing and dispensing registers in use in the respective facilities. Examples of these registers can be found in Annex 7 and Annex 8. The highest priority will be to know which medicines were prescribed for respiratory infections, with second priority to determine which of these prescribed medicines were actually dispensed in the facility. Similar primary care prescribing and dispensing registers may not be available in the outpatient departments of hospitals, although that would be the first choice for sampling; data may need to be extracted from prescriptions stored in the pharmacy, as long as they contain the necessary data to determine what type of respiratory infection was being treated.

The field supervisor will need to determine the best method for sampling in each health facility when on site, depending on the records available, completeness, and ability to link prescribing and dispensing. Apotheker/INRUD will describe the likely options and preferred approaches in their field manual.

Data for the prescribing and dispensing record review will be collected on tablet computers. The final layout of the data collection forms will be developed by Apotheker /INRUD in collaboration with MSH and ITIDO.

Availability of tracer medicines

The health facility study team will record data on the availability and price on the day of the survey of the same set of tracer antibiotics used in the ADDO survey (Annex 5). As in the ADDO, availability will be determined by visual inspection. Data on stock-outs of the same list of tracer medicines will also be collected retrospectively from pharmacy stock records in the health facilities, if those data are available. Data will be collected as the number of days during the previous 6 calendar months when the health facility had none of the tracer antibiotics in stock (Annex 9).

Data on availability and price of tracer medicines and stock-outs will be collected on tablet computers. The final layout of the data collection forms will be developed by Apotheker /INRUD in collaboration with MSH and ITIDO.

Patient exit interviews

The patient exit interviews will target up to 30 patients presenting for care at each facility on the day of the survey. Patients will be sampled according to the methodology described in the WHO Level II Facility Survey Manual.[10]

The interviewer will use an adapted version of the WHO Level II Facility Survey Form to collect age, gender, insurance status, symptoms, tests ordered and performed, medicines prescribed and dispensed, cost of dispensed medicines (if any were dispensed), plans to obtain prescribed medicines that were prescribed and not dispensed during the visit, knowledge about how and how long to take prescribed medicines.

Exit interview data will be collected on tablet computers. The layout of the exit interview data collection form will be developed by Apotheker /INRUD in collaboration with MSH and ITIDO.

Referral tracking

The survey teams will explore gathering data at health facilities on referrals to health facilities from ADDOs. If there is a register of referrals from ADDOs, it may possible to gather data on the volume and types of cases referred. The feasibility of gathering this type of information will need to be determined by pilot visits during the development of the survey by SDSI partners.

If data on referral from ADDOs appear to be available in registers in some health facilities, Apotheker/INRUD will need to develop a paper data collection form to record information on number of referrals and source and reason for 10 recent referrals.

Structured interviews with medical in-charge

These interviews of health facility in-charges will focus on: general attitude towards ADDOs; perceived responsibility for quality of care in ADDOS; current referral experience to and from ADDOs; knowledge and perceptions about antibiotics and AMR; experience with NHIF and CHF and perceptions about drug shortages for NHIF and CHF members; and rational medicine use training history and needs. The preliminary set of topics to be discussed in the semi-structured interviews can be found in Annex 6.

The final list of topics and field protocol for the structured interviews of health facility in-charges will be developed by Apotheker and INRUD, in collaboration with MSH, TFDA, PC, and PSC. It is expected that two survey staff will participate in each interview, one to guide the conversation and the other to take notes on paper forms. The practical and feasibility of entering interview notes directly on tablet computers will be explored in early pilot tests.

Households

Household survey

Household surveys are the best method for collecting data on medicines access and actual medicines use, two key components of the cross-sectional assessment. SDSI partners have agreed to adapt the validated WHO/MeTA household survey instrument for use in the assessment (Annex 10).[12] In addition, the AMR Module for the Demographic and Health Survey (DHS) will be used as a resource to develop questions specifically related to AMR.[13] Questionnaires will be administered in Swahili.

The field protocol for household data collection and the final contents of the instrument will be developed by MUHAS School of Public Health, in consultation with MSH and other SDSI partners. One of the challenges in household surveys is ensuring representativeness and adequate response rate. The probability-based survey design offers the potential for population-based estimation of key medicines access and use parameters in the four regions in which the assessment is taking place. MUHAS and the field teams will track ward and village sampling probabilities and household response rates as part of the field protocol.

Household survey data will be collected on tablet computers. The tablet-based household survey application developed by ITIDO will need to be tested in the field by MUHAS School of Public Health prior to the actual field work in order to ensure that it works under actual survey conditions.

Community stakeholders

Structured Interviews

Structured interviews will be conducted with both central-level and district-level administrative and health sector officials. A draft outline of the topic areas for structured interviews identified by the SDSI stakeholders is provided in Annex 6. The final topics and leading questions will be agreed upon by TFDA, PC, PSC, and MSH.

Structured interviews of government and health sector stakeholders at the central and district levels will be conducted by two-person teams comprised of staff from TFDA, PC, and MSH.

Stakeholder interviews in ADDOs, pharmacies, and health facilities at the ward level will be carried out by staff from Apotheker/INRUD.

3. Study Team Composition and Training

The assessment will be conducted by four main field teams:

- Staff members from the TFDA, PC, and MSH will conduct stakeholder interviews at central and district levels. These will be conducted in advance of other field work in the districts. During these visits, the interview teams will carry out the needed political and logistical preparation for field work at the ward level.
- Apotheker/INRUD will assemble and manage the teams carrying out field work in ADDOs, pharmacies, and health facilities. Necessary skills for data collectors will include familiarity with pharmaceutical names and basic medical terminology. This team will also have responsibility for collecting samples of medicines for quality testing by MUHAS School of Pharmacy.
- MUHAS School of Public Health will assemble teams of data collectors to conduct the household surveys. Knowledge of pharmaceutical data will be less important for these data collectors, although some familiarity with medical terms will be helpful.
- TCAS will recruit, train, and manage data collectors to carry out the simulated customer surveys in ADDOs. These will be completed in each ADDO at least 2 weeks prior to the arrival of the health facility survey teams.

The structure of personnel for the two main field teams will be determined by Apotheker/INRUD and MUHAS School of Public Health for the health facility and household surveys respectively, and described in their field manuals. Each field team should have a designated field supervisor responsible for implementing the study methods according to plan and available for communication with the study coordinating center at MSH.

Individual team members will specialize in collecting the different types of data included in each assessment. Because of the nature of the data to be collected, team members for the health facility survey are likely to be pharmacists, clinical officers, or nurses since they would be familiar with the types of data to be collected. For the household survey, general knowledge about health issues and the structure of the health system would be preferable, although the overall level of training could be lower. Identifying the two individuals in each health facility survey team responsible for the structured interviews will be especially important to meeting the goals of the assessment; special attention should be paid to their training and the consistency of their interviewing and data recording.

The health facility survey and household survey teams will be independent in the field, although coordination will be needed to ensure that they do not arrive in a ward at the same time since they are likely to use the same local contacts. Overall, data collection in the field should not take more than two months in order to meet the overall study timeline of holding a dissemination meeting in June 2013. The implementing partners should staff the field teams in a way that allows work in each district (5 wards and any additional central level facilities) to be completed within a week, and work in each region within about 3 weeks. Data

collection for both the health facility and household components could thus be completed in about 2 months with 2 field teams, and within 1 month with 4 teams. For consistency of field methods, the former may be the preferred approach. The time for data collection in the field will depend on the final number and composition of study teams.

Ideally, the teams would be trained together in a two-day training session to become familiar with the overall goals and methods of the survey. Specialized training in individual study methods for the surveys may take additional time. It would again be optimal for the teams to participate in a two-day pilot test of the data collection process using reduced sample sizes in districts and wards close to Dar es Salaam. Based on the experiences in the pilot test, the assessment protocol and data collection forms would be revised before the actual field work.

4. Proposed Work Plan

The timing of proposed assessment-related activities through June 2014 is summarized in the following table.

TABLE 2: PROPOSED SCHEDULE OF ACTIVITIES

Period	Activity
Sept 2012	Stakeholders review components of the cross-sectional assessment and suggest revisions Discuss which aspects are feasible for routine monitoring
Oct - Nov 2012	Finalize assessment strategy and instruments Prepare application for ethical clearance
Jan 2013	Ethical review and clearance Data collector training and pilot test
Jan – Apr 2013	Assessment field work; data entry and cleaning
Mar – May 2013	Data analysis and reporting
Jun 2013	Stakeholder meeting to interpret the results, make recommendations, and develop monitoring strategy
Jul 2013 – Jun 2014	Finalize and test monitoring strategy

IV. References

1. Center for Pharmaceutical Management. Accredited Drug Dispensing Outlets in Tanzania Strategies for Enhancing Access to Medicines Program, 2008. Management Sciences for Health, Arlington, VA.

2. Tanzania Food and Drugs Authority. Guidelines for establishing and operating accredited drug dispensing outlets, 2009.

3. Management Sciences for Health. East Africa Drug Seller Initiative (EADSI) Evaluation Report, 2011.

4. Goodman C, Kachur SP, Abdulla S, Bloland P, Mills A. Drug shop regulation and malaria treatment in Tanzania--why do shops break the rules, and does it matter? Health Policy Plan 2007; 22(6):393-403.

5. Alba S, Dillip A, Hetzel MW, Mayumana I, Mshana C, Makemba A et al. Improvements in access to malaria treatment in Tanzania following community, retail sector and health facility interventions -- a user perspective. Malar J 2010; 9:163.

6. Alba S, Hetzel MW, Goodman C, Dillip A, Liana J, Mshinda H et al. Improvements in access to malaria treatment in Tanzania after switch to artemisinin combination therapy and the introduction of accredited drug dispensing outlets - a provider perspective. Malar J 2010; 9:164.

7. Ringsted FM, Massawe IS, Lemnge MM, Bygbjerg IC. Saleability of anti-malarials in private drug shops in Muheza, Tanzania: a baseline study in an era of assumed artemisinin combination therapy (ACT). Malar J 2011; 10:238.

8. Rutta E, Kibassa B, McKinnon B, Liana J, Mbwasi R, Mlaki W et al. Increasing Access to Subsidized Artemisinin-based Combination Therapy through Accredited Drug Dispensing Outlets in Tanzania. Health Res Policy Syst 2011; 9:22.

9. WHO. WHO Household Survey to Measure Access to and Use of Medicines: Instructions for data collection; 2009. World Health Organization,

10. WHO. WHO Operational package for assessing, monitoring and evaluating country pharmaceutical situations, 2007.

11. Drug Seller Initiative Toolkit. http://www.drugsellerinitiatives.org/Toolkit/Full-Toolkit.cfm

12. Vialle-Valentin CE, Lecates RF, Zhang F, Desta AT, Ross-Degnan D. Predictors of antibiotic use in African communities: evidence from medicines household surveys in five countries. Trop Med Int Health 2011.

13. Rational Pharmaceutical Management Plus, Center for Pharmaceutical Management. Antimicrobial Resistance Module for Population-Based Surveys, 2008.

Annex 1 Cross-Sectional Assessment Questions

Survey components will include information about community access and use of medicines, as well as community and key stakeholder perceptions and knowledge about medicines use and AMR. From a draft list of possible assessment questions that could be addressed in such a cross-sectional assessment, SDSI stakeholders have focused on the reduced list of questions below. They will need to agree on a final list before the survey and adjust the survey tools accordingly.

ADDOs and Pharmacies [as Applicable](NB: ADDO data collection will be through focus group discussions, while pharmacies will be through a structured survey)

- What is the quality of ADDO services (prescribing, counseling, and referral)?
    a. Do ADDOs stock medicines approved by TDFA to be sold in ADDOs and suitable for treating pediatric pneumonia (amoxicillin and co-trimoxazole in adult and pediatric formulation, procaine penicillin, and erythromycin)?
    b. Do ADDOs prescribe antibiotic in appropriate quantities when they suspect pneumonia?
    c. Do ADDOs prescribe antibiotics when then know that the patient has a non-pneumonia respiratory complaint?
    d. Do ADDOs do anything to differentiate between different kinds of respiratory illness?
- How frequent are referrals and for which conditions? What are the outcomes of referrals?
- What is the estimated total volume of customers and revenues per month in ADDOs? What percentage of revenues is related to sale of antibiotics?
- What is the quality of key medicines sold in ADDOs, including antibiotics suitable for treating pneumonia?
- What has been the recent history of supervisory visits and inspections (by staff at the national, district, and ward level)?
- What is the stock situation and prices for a tracer list of key antimicrobials observed during survey?
- What has been the experience in local ADDOs of being reimbursed by NHIF (overall satisfaction, common problems, length of time to be reimbursed)?

  Are NHIF reimbursement prices to the ADDOs sufficient to recover medicine costs and make a fair profit?

Health Care Facilities

- What is the quality of prescribing and dispensing services provided by health care facilities for respiratory infections?
- How do health care facility personnel perceive the quality of services provided by the local ADDO? What do they see as their responsibility for assuring quality of care and medicines to their community members?
- Are there separate systems used for capturing utilization by NHIF/CHF members?
- What is the stock situation for key essential medicines (observed during survey and over time if retrospective data are available)?

- Is prescribing (number of medicines, types of medicines overall and for key diagnoses) the same or different by insurance type (NHIF, CHF, out of pocket, exempt)?
- What proportion of medicines prescribed is dispensed at the health facility? Which medicines are most commonly unable to be dispensed?
- How is the CHF funding process administered in health facilities at different levels?

Households and Community

- Where do community members go to seek care (public facilities, mission facilities, ADDOs, pharmacies, traditional healers)?
- Where do community members go to access medicines?
- Which medicines do they receive for common acute and chronic illnesses?
- Which medicines are stored at home? Do community members keep antibiotics at home for future use?
- What are the opinions about the quality of care and medicines available in the public and private sector?
- How convenient is access to care in the public facility (opening hours, waiting time, approachable staff, and cost)?
- Is quality of care in public facilities perceived to be satisfactory (competence of providers, availability of medicines and tests)?
- How convenient is access to care in ADDOs (opening hours, waiting time, approachable staff, and cost)?
- Is quality of care in ADDOs perceived to be satisfactory (competence of shop attendant, availability and affordability of medicines)?
- What are experiences with ADDO referral to public facility?

Community Stakeholders

- What are the opinions of district officials about the quality of services provided by the ADDOs?
- What are the key health services issues in the community identified by district officials (financing and quality of care, financing and quality of medicines)?
- What are the opinions of district officials about the controls (or lack of) applied to the sale of antibiotics, and about the actual consumption of antibiotics in the community?
- Do district officials understand what AMR is and perceive it to be a priority issue in their community?
- What are the experiences, expectations, and knowledge about NHIF and CHF?

Annex 2 Selection of Districts and Wards

1 – District and Ward Sample

Region	District	ADDO density	Ward	Population (2002) census	Number of ADDOs
Mbeya				**345297**	**57**
	Mbarali			**136390**	**15**
		High		60112	10
			Madibira	28319	5
			Ubaruku	31793	5
		Low		49203	5
			Igurusi	23384	2
			Utengule/Usangu	25819	3
		No ADDO		27075	0
			Mawindi	27075	0
	Mbeya Urban			**78595**	**16**
		High		36815	11
			Iyela	22358	5
			Nzovwe	14457	6
		Low		21872	5
			Itezi	8140	3
			Mwakibete	13732	2
		No ADDO		19908	0
			Ruanda	19908	0
	Mbozi			**130312**	**26**
		High		72015	21
			Tunduma	34316	12
			Vwawa	37699	9
		Low		42719	5
			Ihanda	25243	2
			Mlowo	17476	3
		No ADDO		15578	0
			Ruanda	15578	0
Morogoro				**266889**	**86**
	Kilombero			**91198**	**32**
		High		47681	25
			Idete	14882	7
			Mlimba	32799	18
		Low		25165	7
			Chita	16768	4
			Mkula	8397	3
		No ADDO		18352	0
			Lumelo	18352	0
	Kilosa			**86671**	**35**
		High		49347	30
			Kibedya	15652	5
			Kidodi	33695	25
		Low		30189	5
			Lumuma	10302	3
			Mabwerebwere	19887	2
		No ADDO		7135	0
			Kilangali	7135	0
	Morogoro Urban			**89020**	**19**
		High		64781	15
			Kihonda	12381	6
			Mazimbu	52400	9
		Low		20014	4
			Boma	8937	1
			Uwanja wa ndege	11077	3
		No ADDO		4225	0
			Kingo	4225	0

Region	District	ADDO density	Ward	Values Population (2002) census	Number of ADDOs
Singida				**237359**	**26**
	Iramba			**93963**	**13**
		High		44948	11
			Iguguno	21558	3
			Shelui	23390	8
		Low		32759	2
			Ilunda	19429	1
			Nkinto	13330	1
		No ADDO		16256	0
			Mtekente	16256	0
	Singida Rural			**95799**	**5**
		High		25186	3
			Mtinko	25186	3
		Low		40391	2
			Puma	16121	1
			Sepuka	24270	1
		No ADDO		30222	0
			Maghojoa	17938	0
			Mudida	12284	0
	Singida Urban			**47597**	**8**
		High		16908	6
			kindai	9181	3
			Utemini	7727	3
		Low		23374	2
			Mandewa	14517	1
			Mitunduruni	8857	1
		No ADDO		7315	0
			Unyambwa	7315	0
Tanga				**198492**	**74**
	Handeni			**84508**	**20**
		High		39453	15
			Chanika	29570	9
			Kabuku	9883	6
		Low		36373	5
			Mkata	21425	3
			Segera	14948	2
		No ADDO		8682	0
			Kang'ata	8682	0
	Muheza			**45303**	**19**
		High		17002	17
			Majengo	9409	9
			Masuguru	7593	8
		Low		16451	2
			Mtindiro	9217	1
			Ngomeni	7234	1
		No ADDO		11850	0
			Misalai	11850	0
	Tanga			**68681**	**35**
		High		44189	29
			Mabawa	26508	21
			Makorora	17681	8
		Low		20206	6
			Mwanzange	7727	2
			Usagara	12479	4
		No ADDO		4286	0
			Mabokweni	4286	0
Grand Total				**1048037**	**243**

2 - District Sample Selection

	District	Wards with ADDOs	ADDOs	Population (2002 census)	Cumulative population	Selected	Notes
Mbeya	Mbozi	17	46	513,600	513,600	** 1 **	
Mbeya	Rungwe	18	32	306,380	819,980		
Mbeya	Mbeya Urban	17	42	265,586	1,085,566	** 2 **	
Mbeya	Mbeya Rural	10	24	254,069	1,339,635		
Mbeya	Mbarali	9	33	234,101	1,573,736	** 3 **	
Mbeya	Chunya	8	26	205,915	1,779,651		
Mbeya	Kyela	12	51	173,830	1,953,481		
Mbeya	Ileje	3	5	109,847	2,063,328		
Morogoro	Kilosa	28	158	488,191	488,191	** 1 **	
Morogoro	Kilombero	16	138	321,611	809,802	** 2 **	
Morogoro	Morogoro Rural	16	80	263,012	1,072,814		
Morogoro	Mvomero	15	122	259,347	1,332,161		
Morogoro	Morogoro Urban	10	35	227,921	1,560,082	** 3 **	
Morogoro	Ulanga	11	55	193,280	1,753,362		
Singida	Singida Rural	28	8	400,377	400,377	** 1 **	No high density ward
Singida	Iramba	16	34	367,036	767,413	** 2 **	
Singida	Manyoni	16	26	204,482	971,895		
Singida	Singida Urban	15	17	114,853	1,086,748	** 3 **	No high density ward
Tanga	Lushoto	?	?	0	0		No ADDO list
Tanga	Muheza	27	31	278,405	278405	** 1 **	
Tanga	Korogwe	33	72	260,238	538643		No ward population data
Tanga	Handeni	10	27	248,633	787276	** 2 **	
Tanga	Tanga	13	76	242,640	1029916	** 3 **	
Tanga	Kilindi	15	41	143,792	1173708		
Tanga	Pangani	6	14	43,920	1217628		Only 1 high density ward

# in Sample	Segment size	Random number	Target population	Sample district #
3	687,776	**0.21159**	145,525	1
			833,301	2
			1,521,077	3
3	584,454	**0.35686**	208,567	1
			793,021	2
			1,377,475	3
3	362,249	**0.85422**	309,441	1
			671,690	2
			1,033,940	3
3	405,876	**0.39240**	159,267	1
			565,143	2
			971,019	3

3 – Ward Sample Selection

Region	District	ADDO density	District/ward	Values: Population (2002 census)	Sum of Population 2002 census	Number of ADDOs	Selected	# to be selected	Segment size	Random number	Target population	Ward select #
Mbeya	**Mbarali**	High	Mbarali/Ubaruku	31793	31793	5	*1*	2	55393	0.0423895	2348	1
			Mbarali/Madibira	28319	60112	5	*2*				57741	2
			Mbarali/Rujewa	27401	87513	7						
			Mbarali/Chimala	23273	110786	6						
		High Total		110786		23						
		Low	Mbarali/Utengule/Usangu	25819	25819	3	*1*	2	39712.5	0.1705695	6774	1
			Mbarali/Igurusi	23384	49203	2	*2*				46486	2
			Mbarali/Mapogoro	15768	64971	2						
			Mbarali/Mahongole	14454	79425	3						
		Low Total		79425		10						
		No ADDO	Mbarali/Mawindi	27075	27075	0	*1*	1	43890	0.1125471	4940	1
			Mbarali/Ruiwa	10386	37461	0						
			Mbarali/Msangaji	6429	43890	0						
		No ADDO Total		43890		0						
	Mbarali Total			**234101**		**33**						
	Mbeya Urban	High	Mbeya Urban/Iyela	22358	22358	5	*1*	2	28939	0.5259534	15221	1
			Mbeya Urban/Ilomba	21063	43421	5					44160	2
			Mbeya Urban/Nzovwe	14457	57878	6	*2*					
		High Total		57878		16						
		Low	Mbeya Urban/Ilemi	16709	16709	3		2	58920.5	0.3838225	22615	1
			Mbeya Urban/Mwakibete	13732	30441	2	*1*				81536	2
			Mbeya Urban/Igawilo	10469	40910	2						
			Mbeya Urban/Iyunga	9898	50808	4						
			Mbeya Urban/Iwambi	9162	59970	2						
			Mbeya Urban/Msalaga	8959	68929	1						
			Mbeya Urban/Isanga	8603	77532	1						
			Mbeya Urban/Itezi	8140	85672	3	*2*					
			Mbeya Urban/Iganzo	8016	93688	1						
			Mbeya Urban/Mabatini	6579	100267	1						
			Mbeya Urban/Uyole	6184	106451	1						
			Mbeya Urban/Iganjo	5106	111557	2						
			Mbeya Urban/Iduda	3436	114993	1						
			Mbeya Urban/Isyesye	2848	117841	2						
		Low Total		117841		26						
		No ADDO	Mbeya Urban/Ruanda	19908	19908	0	*1*	1	89867	0.0489306	4397	1
			Mbeya Urban/Kalobe	9626	29534	0						
			Mbeya Urban/Maanga	7263	36797	0						
			Mbeya Urban/Forest	7181	43978	0						
			Mbeya Urban/Mbalizi Road	6988	50966	0						
			Mbeya Urban/Sinde	5512	56478	0						
			Mbeya Urban/Sisimba	4663	61141	0						
			Mbeya Urban/Itiji	4245	65386	0						
			Mbeya Urban/Ghana	3961	69347	0						
			Mbeya Urban/Maendeleo	3689	73036	0						
			Mbeya Urban/Majengo	3469	76505	0						

Region	District	ADDO density	District/ward	Values Population (2002 census)	Sum of Population 2002 census	Number of ADDOs	Selected	# to be selected	Segment size	Random number	Target population	Ward select #
	Mbeya Urban	No ADDO	Mbeya Urban/Iziwa	2924	79429	0						
			Mbeya Urban/Itende	2697	82126	0						
			Mbeya Urban/Nonde	2140	84266	0						
			Mbeya Urban/Nsoho	1505	85771	0						
			Mbeya Urban/Mwansenkwa	1349	87120	0						
			Mbeya Urban/Itagano	1219	88339	0						
			Mbeya Urban/Tembela	988	89327	0						
			Mbeya Urban/Mwasanga	540	89867	0						
		No ADDO Total		89867		0						
	Mbeya Urban Total			**265586**		**42**						
	Mbozi	High	Mbozi/Vwawa	37699	37699	9	*1*	2	47358	0.2004869	9495	1
			Mbozi/Tunduma	34316	72015	12	*2*				56853	2
			Mbozi/Halungu	22701	94716	5						
		High Total		94716		26						
		Low	Mbozi/Itaka	33254	33254	2		2	125023.5	0.5445929	68087	1
			Mbozi/Igamba	29541	62795	1					193110	2
			Mbozi/Ihanda	25243	88038	2	*1*					
			Mbozi/Msia	24965	113003	2						
			Mbozi/Iyula	24487	137490	1						
			Mbozi/Ivuna	21630	159120	2						
			Mbozi/Nambizo	18724	177844	1						
			Mbozi/Mlowo	17476	195320	3	*2*					
			Mbozi/Kamsamba	15307	210627	1						
			Mbozi/Myovizi	13442	224069	1						
			Mbozi/Chilumo	13360	237429	1						
			Mbozi/Chiwezi	12618	250047	3						
		Low Total		250047		20						
		No ADDO	Mbozi/Isansa	35402	35402	0		1	168837	0.6218409	104990	1
			Mbozi/Nyimbili	21249	56651	0						
			Mbozi/Myunga	16584	73235	0						
			Mbozi/Mlangali	16232	89467	0						
			Mbozi/Ruanda	15578	105045	0	*1*					
			Mbozi/Isandula	13743	118788	0						
			Mbozi/Chitete	13080	131868	0						
			Mbozi/Msangano	11784	143652	0						
			Mbozi/Ndalambo	9007	152659	0						
			Mbozi/Nkangamo	8098	160757	0						
			Mbozi/Kapele	8080	168837	0						
		No ADDO Total		168837		0						
	Mbozi Total			**513600**		**46**						
Mbeya Total				**1013287**		**121**						
Morogoro	**Kilombero**	High	Kilombero/Ifakara	45518	45518	20		2	123499	0.8071805	99686	1
			Kilombero/Kidatu	35209	80727	17					223185	2
			Kilombero/Mlimba	32799	113526	18	*1*					
			Kilombero/Mang'ula	28802	142328	20						

Region	District	ADDO density	District/ward	Values: Population (2002 census)	Sum of Population 2002 census	Number of ADDOs	Selected	# to be selected	Segment size	Random number	Target population	Ward select #
Morogoro	**Kilombero**	High	Kilombero/Mchombe	27207	169535	12						
			Kilombero/Kibaoni	20872	190407	6						
			Kilombero/Kiberege	18459	208866	12						
			Kilombero/Idete	14882	223748	7	*2*					
			Kilombero/Mbingu	13541	237289	6						
			Kilombero/Sanje	9709	246998	5						
		High Total		246998		123						
		Low	Kilombero/Chita	16768	16768	4	*1*	2	24227	0.1829251	4432	1
			Kilombero/Kisawasawa	9060	25828	3					28659	2
			Kilombero/Mkula	8397	34225	3	*2*					
			Kilombero/Utengule	6231	40456	2						
			Kilombero/Mofu	4886	45342	2						
			Kilombero/Chisano	3112	48454	1						
		Low Total		48454		15						
		No ADDO	Kilombero/Lumelo	18352	18352	0	*1*	1	26159	0.5168774	13521	1
			Kilombero/Masagati	5810	24162	0						
			Kilombero/Uchindile	1997	26159	0						
		No ADDO Total		26159		0						
	Kilombero Total			**321611**		**138**						
	Kilosa	High	Kilosa/Gairo	35565	35565	18		2	120462	0.5458911	65759	1
			Kilosa/Kidodi	33695	69260	25	*1*				186221	2
			Kilosa/Chakwale	29072	98332	5						
			Kilosa/Dumila	20289	118621	14						
			Kilosa/Magole	17522	136143	5						
			Kilosa/Iyogwe	17363	153506	5						
			Kilosa/Msowero	16742	170248	5						
			Kilosa/Mikumi	15705	185953	13						
			Kilosa/Kibedya	15652	201605	5	*2*					
			Kilosa/Ruhembe	15102	216707	11						
			Kilosa/Chanzuru	13595	230302	6						
			Kilosa/Kasiki	5736	236038	5						
			Kilosa/Kimamba 'B'	4886	240924	7						
		High Total		240924		124						
		Low	Kilosa/Mamboya	20654	20654	2		2	92601	0.2864874	26529	1
			Kilosa/Mabwerebwere	19887	40541	2	*1*				119130	2
			Kilosa/Rubeho	16975	57516	3						
			Kilosa/Berega	14986	72502	2						
			Kilosa/Magubike	14221	86723	2						
			Kilosa/Rudewa	13860	100583	3						
			Kilosa/Ulaya	13086	113669	3						
			Kilosa/Lumuma	10302	123971	3	*2*					
			Kilosa/Kisanga	10284	134255	4						
			Kilosa/Kidete	9655	143910	1						
			Kilosa/Malolo	8935	152845	2						
			Kilosa/Zombo	8747	161592	3						

Region	District	ADDO density	District/ward	Values: Population (2002 census)	Sum of Population 2002 census	Number of ADDOs	Selected	# to be selected	Segment size	Random number	Target population	Ward select #
		Low	Kilosa/Magomeni	8381	169973	2						
			Kilosa/Mkwatani	7903	177876	1						
			Kilosa/Chagongwe	7326	185202	1						
		Low Total		185202		34						
		No ADDO	Kilosa/Chanjale	12819	12819	0		1	62065	0.5631916	34954	1
			Kilosa/Vidunda	9781	22600	0						
			Kilosa/Mandege	7235	29835	0						
			Kilosa/Kilangali	7135	36970	0	*1*					
			Kilosa/Masanze	6378	43348	0						
			Kilosa/Lubuji	5727	49075	0						
			Kilosa/Kimamba 'A'	5651	54726	0						
			Kilosa/Mbumi	4040	58766	0						
			Kilosa/Uleling'ombe	3299	62065	0						
		No ADDO Total		62065		0						
	Kilosa Total			**488191**		**158**						
	Morogoro Urban	High	Morogoro Urban/Mazimbu	52400	52400	9	*1*	2	46454.5	0.9736713	45231	1
			Morogoro Urban/Mwembesongo	28128	80528	6					91686	2
			Morogoro Urban/Kihonda	12381	92909	6	*2*					
		High Total		92909		21						
		Low	Morogoro Urban/Mafiga	14056	14056	2		2	37392	0.7933447	29665	1
			Morogoro Urban/Kichangani	13259	27315	2					67057	2
			Morogoro Urban/Uwanja wa ndege	11077	38392	3	*1*					
			Morogoro Urban/Kingolwira	10653	49045	2						
			Morogoro Urban/Mji Mpya	10191	59236	2						
			Morogoro Urban/Boma	8937	68173	1	*2*					
			Morogoro Urban/Bigwa	6611	74784	2						
		Low Total		74784		14						
		No ADDO	Morogoro Urban/Kilakala	13709	13709	0		1	60228	0.8922237	53737	1
			Morogoro Urban/Mbuyuni	8854	22563	0						
			Morogoro Urban/Mzinga	7558	30121	0						
			Morogoro Urban/Uwanja wa Taifa	7101	37222	0						
			Morogoro Urban/Mlimani	6520	43742	0						
			Morogoro Urban/Mji mkuu	6157	49899	0						
			Morogoro Urban/Kingo	4225	54124	0	*1*					
			Morogoro Urban/Sultan Area	3102	57226	0						
			Morogoro Urban/Sabasaba	3002	60228	0						
		No ADDO Total		60228		0						
	Morogoro Urban Total			**227921**		**35**						
Morogoro Total				**1037723**		**331**						
Singida	**Iramba**	High	Iramba/Shelui	23390	23390	8	*1*	2	57136.5	0.1428638	8163	1
			Iramba/Kiomboi	22213	45603	4					65299	2
			Iramba/Iguguno	21558	67161	3	*2*					
			Iramba/Kinyangili	18787	85948	3						
			Iramba/Ulemo	14671	100619	5						
			Iramba/Kinampanda	13654	114273	4						

Region	District	ADDO density	District/ward	Values Population (2002 census)	Sum of Population 2002 census	Number of ADDOs	Selected	# to be selected	Segment size	Random number	Target population	Ward select #
Singida	**Iramba**	High Total		114273		27						
		Low	Iramba/Ilunda	19429	19429	1	*1*	2	38081.5	0.2284862	8701	1
			Iramba/Ntwike	14195	33624	1					46783	2
			Iramba/Nkinto	13330	46954	1	*2*					
			Iramba/Ndago	12307	59261	2						
			Iramba/Ibaga	10648	69909	1						
			Iramba/Tulya	6254	76163	1						
		Low Total		76163		7						
		No ADDO	Iramba/Mwanga	21420	21420	0		1	176600	0.4043565	71409	1
			Iramba/Mtoa	17597	39017	0						
			Iramba/Kaselya	16555	55572	0						
			Iramba/Mtekente	16256	71828	0	*1*					
			Iramba/Nduguti	15921	87749	0						
			Iramba/Mwangeza	12414	100163	0						
			Iramba/Urughu	11451	111614	0						
			Iramba/Mpambala	10857	122471	0						
			Iramba/Kidaru	10433	132904	0						
			Iramba/Mbelekese	10241	143145	0						
			Iramba/Kisiriri	10174	153319	0						
			Iramba/Gumanga	9851	163170	0						
			Iramba/Kyengege	6997	170167	0						
			Iramba/Msingi	6433	176600	0						
		No ADDO Total		176600		0						
	Iramba Total			**367036**		**34**						
	Singida Rural	High	Singida Rural/Mtinko	25186	25186	3	*1*	1	25186			1
		High Total		25186		3						
		Low	Singida Rural/Sepuka	24270	24270	1	*1*					
			Singida Rural/Ikhanoda	20797	45067	1		2	55241	0.2284862	12622	1
			Singida Rural/Ikungu	18590	63657	1					67863	2
			Singida Rural/Puma	16121	79778	1	*2*					
			Singida Rural/Mungaa	15761	95539	1						
			Singida Rural/Ngimu	14943	110482	1						
		Low Total		110482		6						
		No ADDO	Singida Rural/Kinyeto	19259	19259	0		2	132354.5	0.2348432	31083	1
			Singida Rural/Maghojoa	17938	37197	0	*1*				163437	2
			Singida Rural/Mwaru	17776	54973	0						
			Singida Rural/Muhintiri	16512	71485	0						
			Singida Rural/Ilongero	16366	87851	0						
			Singida Rural/Merya	15809	103660	0						
			Singida Rural/Makuro	15453	119113	0						
			Singida Rural/Ughandi	14564	133677	0						
			Singida Rural/Ntuntu	13950	147627	0						
			Singida Rural/Ihanja	13547	161174	0						
			Singida Rural/Mudida	12284	173458	0	*2*					
			Singida Rural/Issuna	11267	184725	0						

Region	District	ADDO density	District/ward	Values: Population (2002 census)	Sum of Population 2002 census	Number of ADDOs	Selected	# to be selected	Segment size	Random number	Target population	Ward select #
	Singida Rural	No ADDO	Singida Rural/Minyughe	11149	195874	0						
			Singida Rural/Mgori	10762	206636	0						
			Singida Rural/Dungunyi	10711	217347	0						
			Singida Rural/Mangonyi	10191	227538	0						
			Singida Rural/Siuyu	8593	236131	0						
			Singida Rural/Misughaa	8462	244593	0						
			Singida Rural/Mgungira	8133	252726	0						
			Singida Rural/Msisi	7108	259834	0						
			Singida Rural/Irisya	4875	264709	0						
		No ADDO Total		264709		0						
	Singida Rural Total			**400377**		**9**						
	Singida Urban	High	Singida Urban/kindai	9181	9181	3	*1*	2	9873	0.1428638	1410	1
			Singida Urban/Utemini	7727	16908	3	*2*				11283	2
			Singida Urban/Ipembe	2838	19746	4						
		High Total		19746		10						
		Low	Singida Urban/Majengo	17979	17979	2		2	26337.5	0.8845327	23296	1
			Singida Urban/Mandewa	14517	32496	1	*1*				49634	2
			Singida Urban/Mughanga	11322	43818	2						
			Singida Urban/Mitunduruni	8857	52675	1	*2*					
		Low Total		52675		6						
		No ADDO	Singida Urban/Unyamikumbi	10451	10451	0		1	42432	0.5439472	23081	1
			Singida Urban/Mwankoko	8707	19158	0						
			Singida Urban/Unyambwa	7315	26473	0	*1*					
			Singida Urban/Mtipa	6478	32951	0						
			Singida Urban/Mtamaa	6230	39181	0						
			Singida Urban/Mungumaji	3251	42432	0						
		No ADDO Total		42432		0						
	Singida Urban Total			**114853**		**16**						
Singida Total				**882266**		**59**						
Tanga	**Handeni**	High	Handeni/Chanika	29570	29570	9	*1*	2	19726.5			1
			Handeni/Kabuku	9883	39453	6	*2*					2
		High Total		39453		15						
		Low	Handeni/Mkata	21425	21425	3	*1*					
			Handeni/Vibaoni	18707	40132	2		2	39983	0.1741978	6965	1
			Handeni/Segera	14948	55080	2	*2*				46948	2
			Handeni/Sindeni	13076	68156	3						
			Handeni/Mazingara	11810	79966	2						
		Low Total		79966		12						
		No ADDO	Handeni/Ndolwa	16070	16070	0		1	129214	0.8381889	108306	1
			Handeni/Kwankonje	16019	32089	0						
			Handeni/Mgambo	13590	45679	0						
			Handeni/Misima	13292	58971	0						
			Handeni/Kwedizinga	11428	70399	0						
			Handeni/Komkonga	11391	81790	0						
			Handeni/Kwaluguru	10769	92559	0						

Region	District	ADDO density	District/ward	Values Population (2002 census)	Sum of Population 2002 census	Number of ADDOs	Selected	# to be selected	Segment size	Random number	Target population	Ward select #
	Handeni	No ADDO	Handeni/Kwamsisi	8757	101316	0						
			Handeni/Kang'ata	8682	109998	0	*1*					
			Handeni/Kwamatuku	6922	116920	0						
			Handeni/Kiva	6807	123727	0						
			Handeni/Kwasunga	5487	129214	0						
		No ADDO Total		129214		0						
	Handeni Total			**248633**		**27**						
	Muheza	High	Muheza/Majengo	9409	9409	9	*1*	2	8501			1
			Muheza/Masuguru	7593	17002	8	*2*					2
		High Total		17002		17						
		Low	Muheza/Mtindiro	9217	9217	1	*1*	2	34166	0.1366952	4670	1
			Muheza/Lusanga	9201	18418	3					38836	2
			Muheza/Songa	8636	27054	2						
			Muheza/Pande	7670	34724	1						
			Muheza/Ngomeni	7234	41958	1	*2*					
			Muheza/Magila	5693	47651	1						
			Muheza/Mbaramo	5602	53253	1						
			Muheza/Kicheba	5294	58547	1						
			Muheza/Potwe	5037	63584	2						
			Muheza/Misozwe	4748	68332	1						
		Low Total		68332		14						
		No ADDO	Muheza/Maramba	25392	25392	0		1	193071	0.348189	67225	1
			Muheza/Mhinduro	13153	38545	0						
			Muheza/Kisiwani	12847	51392	0						
			Muheza/Duga	11946	63338	0						
			Muheza/Misalai	11850	75188	0	*1*					
			Muheza/Gombero	11367	86555	0						
			Muheza/Nkumba	10629	97184	0						
			Muheza/Kwafungo	9056	106240	0						
			Muheza/Mkinga	7851	114091	0						
			Muheza/Mkuzi	7458	121549	0						
			Muheza/Kilulu	7122	128671	0						
			Muheza/Zirai	7022	135693	0						
			Muheza/Moa	7015	142708	0						
			Muheza/Kigongoi	6322	149030	0						
			Muheza/Manza	5665	154695	0						
			Muheza/Kigombe	5607	160302	0						
			Muheza/Daluni	5459	165761	0						
			Muheza/Tingeni	5054	170815	0						
			Muheza/Magoroto	5051	175866	0						
			Muheza/Bwembwera	4538	180404	0						
			Muheza/Mwakijembe	4413	184817	0						
			Muheza/Mtimbwani	4302	189119	0						
			Muheza/Kwale	3952	193071	0						
		No ADDO Total		193071		0						

Region	District	ADDO density	District/ward	Values: Population (2002 census)	Sum of Population 2002 census	Number of ADDOs	Selected	# to be selected	Segment size	Random number	Target population	Ward select #
	Muheza Total			**278405**		**31**						
	Tanga	High	Tanga/Mabawa	26508	26508	21	*1*	2	45296.5	0.255498	11573	1
			Tanga/Mzingani	23287	49795	9					56870	2
			Tanga/Makorora	17681	67476	8	*2*					
			Tanga/Duga	13185	80661	7						
			Tanga/Pongwe	9932	90593	5						
		High Total		90593		50						
		Low	Tanga/Nguvumali	17117	17117	3		2	46559	0.89922	41867	1
			Tanga/Chumbageni	15106	32223	4					88426	2
			Tanga/Usagara	12479	44702	4	*1*					
			Tanga/Tangasisi	11142	55844	4						
			Tanga/Msambweni	10651	66495	4						
			Tanga/Maweni	9642	76137	4						
			Tanga/Mzizima	9254	85391	1						
			Tanga/Mwanzange	7727	93118	2	*2*					
		Low Total		93118		26						
		No ADDO	Tanga/Majengo	8830	8830	0		1	58929	0.6879522	40540	1
			Tanga/Ngamiani Kusini	8662	17492	0						
			Tanga/Kiomoni	6230	23722	0						
			Tanga/Central	6098	29820	0						
			Tanga/Ngamiani Kati	5893	35713	0						
			Tanga/Ngamiani Kaskazini	4467	40180	0						
			Tanga/Mabokweni	4286	44466	0	*1*					
			Tanga/Kirare	4146	48612	0						
			Tanga/Chongoleani	4092	52704	0						
			Tanga/Tongoni	4013	56717	0						
			Tanga/Marungu	2212	58929	0						
		No ADDO Total		58929		0						
	Tanga Total			**242640**		**76**						
Tanga Total				**769678**		**134**						
Grand Total				**3702954**		**645**						

Annex 3 Methods, Sources, and Responsible Partners for Assessment

Location	Method	Data Collected	Capture with	Responsible Partner(s)	Assessment Questions (see Annex 1)
ADDOs	Record review and general observation	• Observe availability and price for tracer medicines • Observe if dispensing register is available and if so, sample retrospective data on dispensing for customers with prescribed antibiotics over past 3 months • Observe if referral register is available and if so, record referral volume over the past 3 months • Volume and types of prescriptions reimbursed by NHIF during last 3 months (if applicable) • General shop operations including the qualifications of the dispenser	Tablet + GIS*	Apotheker INRUD	Q1a, Q1b, Q1c, Q2, Q3, Q6
	Focus group discussions	• Conduct focus group discussions in all 12 districts: o Monthly utilization, overall and for antibiotics o KAP regarding antimicrobial use and AMR o Any experience with NHIF reimbursement o Perceptions of prescribing and dispensing practices	Paper (or tablet) + GIS*	Apotheker, INRUD + subcontractor	Q2, Q3, Q5, Q7, Q8
	Simulated customers	• Prior to the survey, 3 separate mystery shoppers will assess dispensing for 3 scenarios in different shops: severe ARI (fast-breathing); mild ARI; request for antibiotics	Paper*	TCAS	Q1b, Q1c, Q1d, Q2
	Survey on quality of medicines	• For a limited number of tracer antibiotics (commonly used or known quality problems), test quality of: o Lowest price generic o Most dispensed product	Purchase and analyze	MUHAS School of Pharmacy	Q4
Private Pharmacies	Record review and observation	• Observe availability and price for tracer medicines • Observe if dispensing register is available and if so, sample retrospective data on dispensing (and whether medicine was prescribed) for customers with respiratory illness (ARI/URTI) over past 3 months • Volume and types of prescriptions reimbursed by NHIF during last 3 months (if applicable)	Tablet + GIS*	Apotheker INRUD	Q1a, Q1b, Q1c, Q2, Q3, Q6
	Structured interview	• Interview Pharmacy owner and dispenser on: o Monthly utilization, overall and for antibiotics o KAP regarding antimicrobial use and AMR • Any experience with NHIF reimbursement	Paper (or tablet) + GIS*	Apotheker, INRUD	Q2, Q3, Q5, Q7, Q8
	Survey on quality of medicines	• For a limited number of tracer antibiotics (commonly used or known quality problems), test quality of: o Lowest price generic • Most dispensed product	Purchase and analyze	MUHAS School of Pharmacy	Q4

Location	Method	Data Collected	Capture with	Responsible Partner(s)	Assessment Questions (see Annex 1)
Public Health Care Facilities	Record review and observation	• Review sample of prescribing records, dispensing records, or prescriptions for patients with respiratory illness (ARI/URTI) over past 3 months to obtain o Prescribing and dispensing for tracer conditions o NHIF or CHF insurance status • Observe if there is a source of data on ADDO referrals and if so, collect data on referrals in last 3 months • Observe current pharmacy stock levels and patient prices for a basket of tracer antibiotics	Tablets +GIS*	Apotheker INRUD	Q9, Q11, Q12, Q13, Q14
	Patient exit interviews	• For up to 30 patients exiting facility after receiving care on the day of the survey, record: o Details of prescription and dispensing, including plans to obtain medicines (if not dispensed) o KAP (care, access, insurance, how to take medicines) o Socioeconomic status, insurance status	Tablet (or paper)*	Apotheker, INRUD,	Q9, Q14
	Structured interviews	• Interview health facility staff on: o KAP (STGs, rational use, antibiotic use, AMR) o Role in relation to ADDOs and referrals o Care for CHF patients	Paper*	Apotheker, INRUD	Q10, Q11, Q13, Q14, Q15
Household	Survey	• Conduct population-based survey of households on: o Illness prevalence, care seeking, medicine use (acute & chronic), medicines at home, referral o Socioeconomic status, insurance status o Attitudes on ADDOs, care, medicines, referrals, AMR, insurance • Validate 2-wk recall against family medical care book	Tablet +GIS*	MUHAS School of Public Health	Q16 to Q25
Community stakeholders	Structured interviews	• Interview central level and district stakeholders concerning activities, knowledge, and opinions about ADDOs, health care, access to medicines, NHIF/CHF insurance, and AMR	Paper*	MSH, TFDA, PC	Q26 to Q30

* Data collection tools to be finalized with implementing partners, who will identify and manage data collectors.

Annex 4 ADDO Patient Drug Register

Ministry of Health and Social Welfare
Tanzania Food and Drugs Authority

Register for Patients' Medicines

Name of ADDO _____ Page No. _____

Date	Name of Patient	Address	Sex (M/F)	Age	Type of disease	Generic name of medicine	Dosage	Quantity of medicines for the whole course	Name of health facility: Hospital, Health Center, Dispensary	Price for each medicine sold	Signature of dispenser

Source: Drug Seller Initiative ToolKit @ http://www.drugsellerinitiatives.org/Toolkit/Full-Toolkit.cfm

Annex 5 Model Stock Availability and Price Data Collection Form

Name & location of ADDO/pharmacy/facility: _____ Date: _____ Data collector: _____

Medicine *		Enter data for the specific product with the largest amount available in stock:						
Generic name, dosage form, strength	Total # products available	Brand name	Manufacturer	Product registered? Y/N/DK	Product expired? Y/N/DK	# units per pack**	Price of pack	Unit price
Artemether-Lumefantrine (ALu-paediatric)								
Quinine 300mg tablets								
Quinine 600mg2ml injection (as dihydrochloride)								
Amoxycillin trihydrate capsules 250mg								
Amoxycillin trihydrate oral suspension 125mg/5ml								
Cotrimoxazole 480mg tablets								
Cotrimoxazle 240mg/5ml suspension								
Doxycycline 100mg capsules/tablets								
Erythromycin 125mg/5ml oral suspension								
Erythromycin 250mg tablets								
Metronidazole 200mg tablets								
Metronidazole 200mg/5ml oral suspension								
Phenoxymethylpenicillin 250mg tablets								
Procaine Penicillin Fortified 4MU								
Benzyl Penicillin powder for injection 5 MU								

***** List will be finalized by SDSI partners

****** If product is sold by individual units (e.g., tablet) rather than packs, note unit price and mark "1" for number of units per pack.

Annex 6 Outlines for Structured Interviews

Structured interviews will be used to gather information from respondents to: (1) complement and explain the empirical data gathered during the survey; (2) explore perceptions about access and use of medicines in the community; and (3) understand the key issues about delivery of medicines that need to be monitored.

Interviews at central and district level will be carried out by staff from MSH, TFDA, and PC. Interviews at ward level will be conducted by Apotheker/INRUD data collectors. The stakeholders have narrowed a list of possible issues that could be addressed during these interviews to the ones outlined below. The final list of topics and the leading questions to be used to begin discussion on these topics will need to be agreed upon prior to the application for ethical approval and initiation of field work.

ADDO owner and dispenser

ADDO management

- What is the volume of customers in the last month?
- What is the percentage of customers demanding a particular antibiotic?
- What is the volume of antibiotics purchased in the last month? What percentage of customers are dispensed antibiotics? What are the most popular antibiotics prescribed?
- What were the sources of the antibiotics purchased? (check available documents for sources)
- What are key issues related to interacting with ADDO associations, local government, local health facilities, pharmacies, and the community?
- What has been the recent history of supervisory visits and inspections (national, district, ward level)?

ADDO and NHIF

- Has the ADDO ever tried to be accredited by NHIF? What were the challenges? Would they be interested in NHIF accreditation?
- If the ADDO has decided to discontinue NHIF reimbursement, what were the reasons?
- Are NHIF prices sufficient to recover medicine costs and make fair profit?
- What are positive and negative aspects of the NHIF reimbursement process?

Opinions about AMR and training needs

- Use the ADDO dispensers training course related to use of antibiotics (duration, full dose, etc.) and the DHS AMR module to formulate specific questions testing knowledge about AMR and training needs such as:
- Have they heard about any possible dangers with using antibiotics? Do they know about antibiotic resistance? Can they describe what causes resistance? What types of training has the dispenser had since the initial ADDO training? What do they perceive as training needs?

Health facility in-charge

Opinions about ADDOs

- Where do patients obtain medicines when they are out of stock at the health facility? Do you recommend that they go to ADDOs?
- What are the potential benefits and risks of allowing CHF patients to obtain prescribed medicines at the ADDOs?
- Do you ever receive referrals from ADDOs? How many per month? Re they usually appropriate?
- How do you know if an ADDO is doing a good job?
- Do you have any role to play in relation to ADDOs (e.g., training, supervision)?

NHIF/CHF

- What percentage of patients are NHIF or CHF members?

- Are NHIF/CHF patients managed separately in the clinic process (registration, clinical services, pharmacy)?
- What proportion of medicines prescribed for CHF members is actually dispensed at the health facility?

Opinions about AMR

- Is antimicrobial use monitored in the facility? If yes, by whom and how?
- Is the HTC doing anything related to antibiotic use? What are they doing? Has it been successful?
- Has the staff received training on rational use of antimicrobials?
- Has the staff received training on infection prevention and control?

District administrators (Executive Director, Health Secretary Treasurer, Chairman)

Budget utilization

- How are decisions made about budgeting for health activities?
- Are any district funds used for purchasing medicines?
- If applicable: What is the percentage of CHF funds allocated to medicines?
- Are any funds allocated for activities related to ADDOs (training, supervision)?

Opinions about ADDOs

- What is the role of ADDOs in the health system?
- Is the ADDO beneficial to the community? In what ways?
- Do you ever receive complaints about ADDOs from customers? What are the issues raised?
- How do you know if ADDOs are doing a good job in their role?

District NHIF/CHF Coordinator

CHF membership and utilization

- What is the current CHF membership? Has it been increasing or decreasing?
- Are data available on utilization by CHF members (overall and medicines)?
- Would utilization increase if CHF members could receive medicines in the ADDOs when they are out of stock in health facilities?

CHF and ADDOs

- What are the perceptions of NHIF and CHF members about ADDOs?
- What is the role of the district in linking ADDOs and CHF members? What would be the benefits and risks for ADDOs and for CHF members?
- Are any CHF funds disbursed for ADDO-related activities? Are funds used to purchase medicines?

District medical officials (District Medical Officer, District Pharmacist)

Opinions about AMR

- Is there a team in charge of surveillance of antimicrobial use in the district? Are data on antimicrobial use collected in the district?
- Are there district regulations to restrict antimicrobial prescriptions?
- What things are being done to enforce regulations regarding sales of antibiotics?
- What is being done to restrict prescriptions of antibiotics?

Central level administrative officials

(TFDA: Director General, Director of Medicines and Cosmetics; PSC: Chief Pharmacist, person responsible for rational use; PC: Registrar, Head of Pharmacy Practice; NHIF/CHF: Director General, CHF Coordinator, person in charge of ADDO reimbursement, NHIF Pharmacist)

Opinions about AMR

- Who is in control of AMR issues in the organization?
- What structures are in place to monitor antimicrobial use?
- What things are being done to control AMR in public health facilities, private health facilities and ADDOs (surveillance, supervision, inspection)?
- Is AMR a topic in training programs?

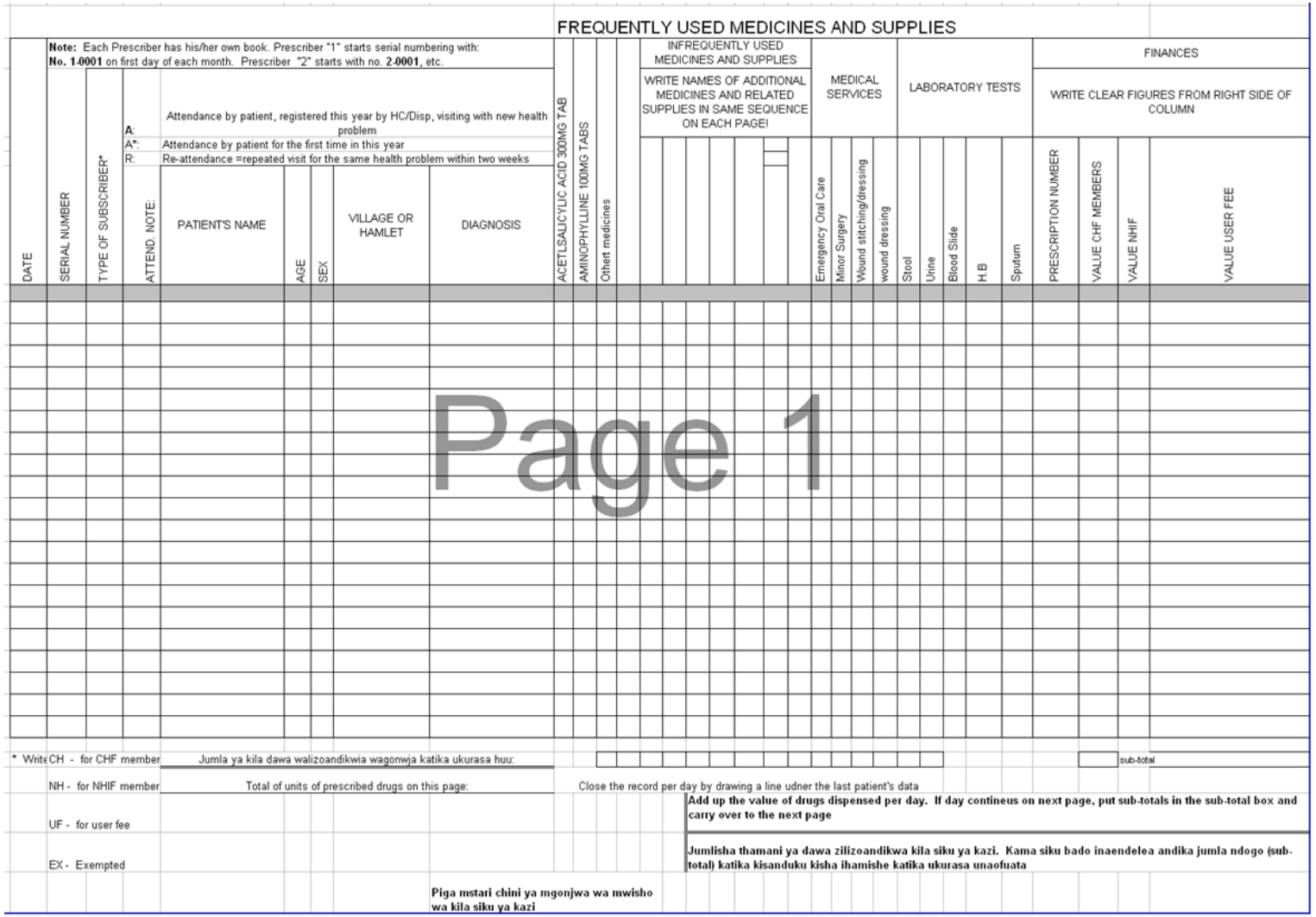
Relationship to ADDOs

- What is the perceived role of the organization in improving quality of care in ADDOs?
- Are any funds allocated to for training and supervision in ADDOs?
- How could routine monitoring of practices in ADDOs be included in their monitoring system?

NHIF/CHF

- What would be the advantages and disadvantages of allowing CHF members to be receive medicines in ADDOs when they are out of stock at health facilities?
- What would be the best structure for processing reimbursements if such a linkage could be put in place? Would it be possible to use cell phone-based reimbursement (e.g., M-Pesa)?

Annex 7 Example of Public Health Facility Prescribing Register



FREQUENTLY USED MEDICINES AND SUPPLIES

Note: Each Prescriber has his/her own book. Prescriber "1" starts serial numbering with: **No. 1-0001** on first day of each month. Prescriber "2" starts with no. **2-0001**, etc.

A: Attendance by patient, registered this year by HC/Disp, visiting with new health problem

A*: Attendance by patient for the first time in this year

R: Re-attendance =repeated visit for the same health problem within two weeks

DATE	SERIAL NUMBER	TYPE OF SUBSCRIBER*	ATTEND. NOTE:	PATIENT'S NAME	AGE	SEX	VILLAGE OR HAMLET	DIAGNOSIS	ACETLSALICYLIC ACID 300MG TAB	AMINOPHYLLINE 100MG TABS	Othert medicines	INFREQUENTLY USED MEDICINES AND SUPPLIES: WRITE NAMES OF ADDITIONAL MEDICINES AND RELATED SUPPLIES IN SAME SEQUENCE ON EACH PAGE!						MEDICAL SERVICES: Emergency Oral Care	Minor Surgery	Wound stitching/dressing	wound dressing	LABORATORY TESTS: Stool	Urine	Blood Slide	H.B	Sputum	FINANCES: WRITE CLEAR FIGURES FROM RIGHT SIDE OF COLUMN: PRESCRIPTION NUMBER	VALUE CHF MEMBERS	VALUE NHIF	VALUE USER FEE

* Write CH - for CHF member | Jumla ya kila dawa walizoandikwia wagonwja katika ukurasa huu: | sub-total

NH - for NHIF member | Total of units of prescribed drugs on this page: | Close the record per day by drawing a line udner the last patient's data

UF - for user fee | **Add up the value of drugs dispensed per day. If day contineus on next page, put sub-totals in the sub-total box and carry over to the next page**

EX - Exempted | **Jumlisha thamani ya dawa zilizoandikwa kila siku ya kazi. Kama siku bado inaendelea andika jumla ndogo (sub-total) katika kisanduku kisha ihamishe katika ukurasa unaofuata**

Piga mstari chini ya mgonjwa wa mwisho wa kila siku ya kazi

Annex 8 Example of Public Health Facility Dispensing Register

																					PAGE NO.					
			FREQUENTLY USED MEDICINES												INFREQUENTLY USED MEDICINES						MEDICINES DISPENSED				
DATE	PRESCRIPTION NO.	TYPE OF SUBSCRIBER	ACETYLSALICYLIC ACID TAB 300MG	AMINOPHYLLINE 100MG TABS	Other medicines	Other medicines	Other medicines	Other medicines													Value of Medicines CHF	Value of Medicines NHIF/NSSF	Value of Mediciness User Fee	Value of Medicines exemption	Dispensers initials
																					T. shs	T. shs	T. shs	T. shs	
Jumla ya kila dawa iliyotolewa katika ukurasa huu																									
																					Sub-total	Sub-total	Sub-total	Sub-total	

Total Units Dispensed
Piga mstari chini ya mgonjwa wa mwisho wa kila siku
Draw a line under the last patient for each day

Jumlisha thamani ya dawa zilizotolewa ukurasa huu
Add up the value of the medicines dispensed on this page

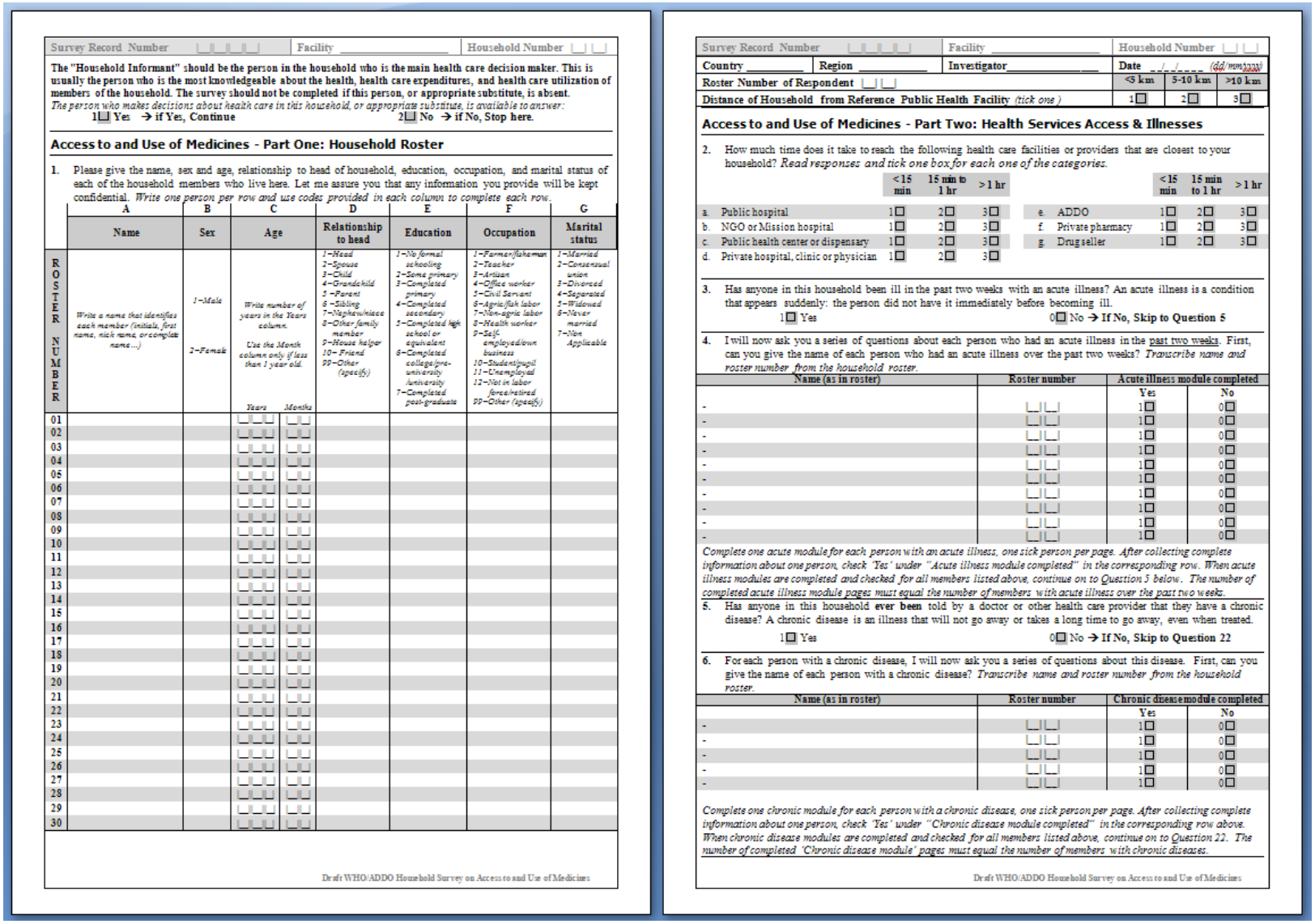
Annex 9 Model Pharmacy Stock-out Data Collection Form

Name & location of facility: _____ Date: _____ Data collector: _____

Medicine *	**Enter month/year and days during that month the medicine was out of stock:**					
Generic name, dosage form, strength	**/**	**/**	**/**	**/**	**/**	**/**
Artemether-Lumefantrine (ALu-paediatric)						
Quinine 300mg tablets						
Quinine 600mg2ml injection (as dihydrochloride)						
Amoxycillin trihydrate capsules 250mg						
Amoxycillin trihydrate oral suspension 125mg/5ml						
Cotrimoxazole 480mg tablets						
Cotrimoxazle 240mg/5ml suspension						
Doxycycline 100mg capsules/tablets						
Erythromycin 125mg/5ml oral suspension						
Erythromycin 250mg tablets						
Metronidazole 200mg tablets						
Metronidazole 200mg/5ml oral suspension						
Phenoxymethylpenicillin 250mg tablets						
Procaine Penicillin Fortified 4MU						
Benzyl Penicillin powder for injection 5 MU						

***** List will be finalized by SDSI partners

Annex 10 Modified WHO/MeTA Household Medicines Survey Instrument



Survey Record Number ☐☐☐☐ Facility _____ Household Number ☐☐

The "Household Informant" should be the person in the household who is the main health care decision maker. This is usually the person who is the most knowledgeable about the health, health care expenditures, and health care utilization of members of the household. The survey should not be completed if this person, or appropriate substitute, is absent.

The person who makes decisions about health care in this household, or appropriate substitute, is available to answer:

1☐ Yes → **if Yes, Continue** 2☐ No → **if No, Stop here.**

Access to and Use of Medicines - Part One: Household Roster

1. Please give the name, sex and age, relationship to head of household, education, occupation, and marital status of each of the household members who live here. Let me assure you that any information you provide will be kept confidential. *Write one person per row and use codes provided in each column to complete each row.*

	A	B	C		D	E	F	G
	Name	Sex	Age		Relationship to head	Education	Occupation	Marital status
ROSTER NUMBER	*Write a name that identifies each member (initials, first name, nick name, or complete name…)*	*1–Male 2–Female*	*Write number of years in the Years column. Use the Month column only if less than 1 year old.* Years	Months	*1–Head 2–Spouse 3–Child 4–Grandchild 5–Parent 6–Sibling 7–Nephew/niece 8–Other family member 9–House helper 10– Friend 99–Other (specify)*	*1–No formal schooling 2–Some primary 3–Completed primary 4–Completed secondary 5–Completed high school or equivalent 6–Completed college/pre-university/university 7–Completed post-graduate*	*1–Farmer/fisherman 2–Teacher 3–Artisan 4–Office worker 5–Civil Servant 6–Agric/fish labor 7–Non-agric labor 8–Health worker 9–Self-employed/own business 10–Student/pupil 11–Unemployed 12–Not in labor force/retired 99–Other (specify)*	*1–Married 2–Consensual union 3–Divorced 4–Separated 5–Widowed 6–Never married 7–Non Applicable*
01			☐☐	☐☐				
02			☐☐	☐☐				
03			☐☐	☐☐				
04			☐☐	☐☐				
05			☐☐	☐☐				
06			☐☐	☐☐				
07			☐☐	☐☐				
08			☐☐	☐☐				
09			☐☐	☐☐				
10			☐☐	☐☐				
11			☐☐	☐☐				
12			☐☐	☐☐				
13			☐☐	☐☐				
14			☐☐	☐☐				
15			☐☐	☐☐				
16			☐☐	☐☐				
17			☐☐	☐☐				
18			☐☐	☐☐				
19			☐☐	☐☐				
20			☐☐	☐☐				
21			☐☐	☐☐				
22			☐☐	☐☐				
23			☐☐	☐☐				
24			☐☐	☐☐				
25			☐☐	☐☐				
26			☐☐	☐☐				
27			☐☐	☐☐				
28			☐☐	☐☐				
29			☐☐	☐☐				
30			☐☐	☐☐				

Draft WHO/ADDO Household Survey on Access to and Use of Medicines

Survey Record Number ☐☐☐☐ Facility _____ Household Number ☐☐

Country _____ Region _____ Investigator _____ Date __/__/____ (dd/mm/yyyy)

Roster Number of Respondent ☐☐

Distance of Household from Reference Public Health Facility *(tick one)*	<5 km	5-10 km	>10 km
	1☐	2☐	3☐

Access to and Use of Medicines - Part Two: Health Services Access & Illnesses

2. How much time does it take to reach the following health care facilities or providers that are closest to your household? *Read responses and tick one box for each one of the categories.*

	<15 min	15 min to 1 hr	>1 hr		<15 min	15 min to 1 hr	>1 hr
a. Public hospital	1☐	2☐	3☐	e. ADDO	1☐	2☐	3☐
b. NGO or Mission hospital	1☐	2☐	3☐	f. Private pharmacy	1☐	2☐	3☐
c. Public health center or dispensary	1☐	2☐	3☐	g. Drug seller	1☐	2☐	3☐
d. Private hospital, clinic or physician	1☐	2☐	3☐				

3. Has anyone in this household been ill in the past two weeks with an acute illness? An acute illness is a condition that appears suddenly: the person did not have it immediately before becoming ill.

1☐ Yes 0☐ No → **If No, Skip to Question 5**

4. I will now ask you a series of questions about each person who had an acute illness in the past two weeks. First, can you give the name of each person who had an acute illness over the past two weeks? *Transcribe name and roster number from the household roster.*

Name (as in roster)	Roster number	Acute illness module completed	
		Yes	No
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐

Complete one acute module for each person with an acute illness, one sick person per page. After collecting complete information about one person, check 'Yes' under "Acute illness module completed" in the corresponding row. When acute illness modules are completed and checked for all members listed above, continue on to Question 5 below. The number of completed acute illness module pages must equal the number of members with acute illness over the past two weeks.

5. Has anyone in this household **ever been** told by a doctor or other health care provider that they have a chronic disease? A chronic disease is an illness that will not go away or takes a long time to go away, even when treated.

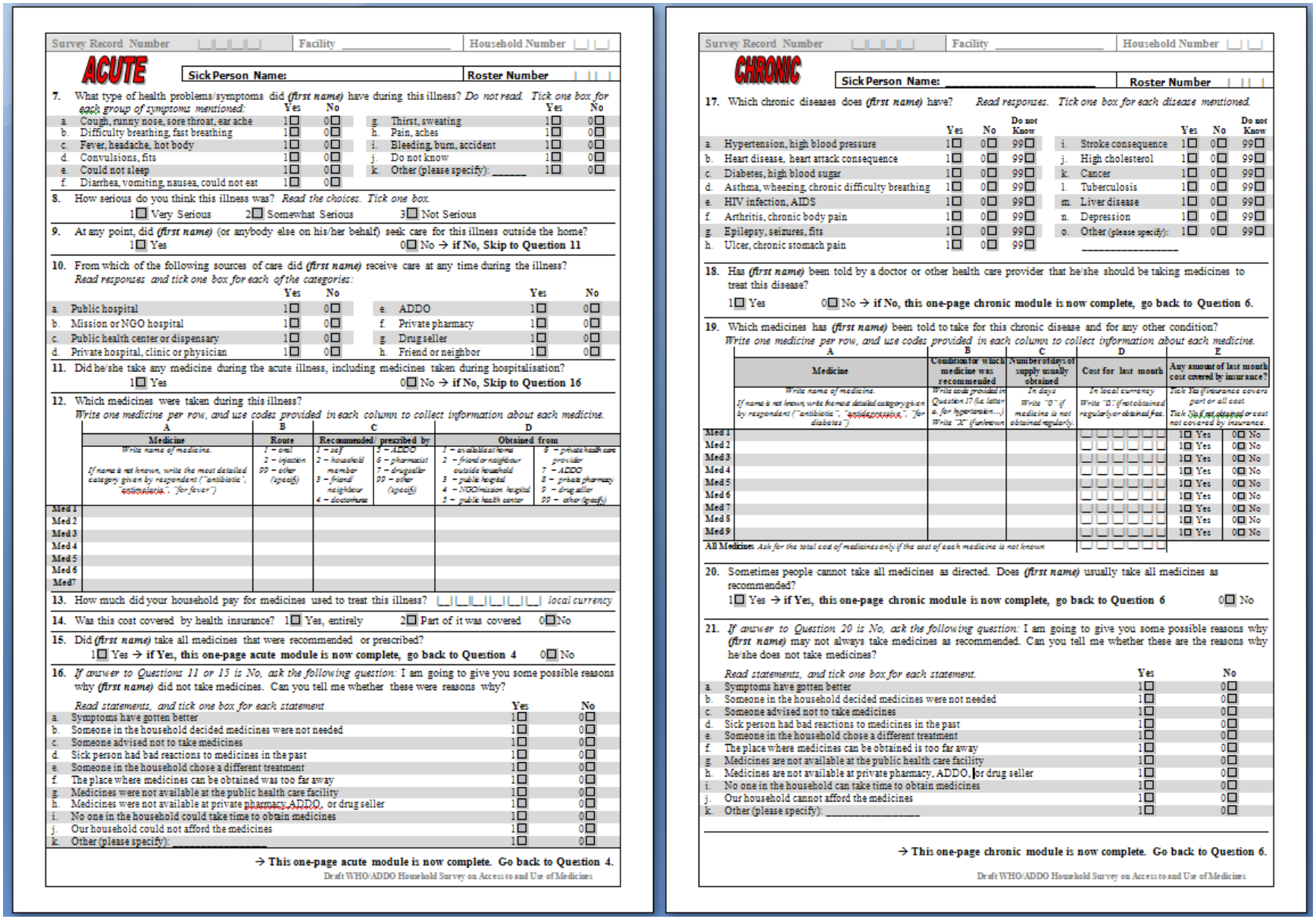
1☐ Yes 0☐ No → **If No, Skip to Question 22**

6. For each person with a chronic disease, I will now ask you a series of questions about this disease. First, can you give the name of each person with a chronic disease? *Transcribe name and roster number from the household roster.*

Name (as in roster)	Roster number	Chronic disease module completed	
		Yes	No
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐
-	☐☐	1☐	0☐

Complete one chronic module for each person with a chronic disease, one sick person per page. After collecting complete information about one person, check 'Yes' under "Chronic disease module completed" in the corresponding row above. When chronic disease modules are completed and checked for all members listed above, continue on to Question 22. The number of completed 'Chronic disease module' pages must equal the number of members with chronic diseases.

Draft WHO/ADDO Household Survey on Access to and Use of Medicines



Survey Record Number ____ Facility ____ Household Number ____

ACUTE

Sick Person Name: ____ Roster Number ____

7. What type of health problems/symptoms did ***(first name)*** have during this illness? *Do not read. Tick one box for each group of symptoms mentioned:*

		Yes	No			Yes	No
a.	Cough, runny nose, sore throat, ear ache	1☐	0☐	g.	Thirst, sweating	1☐	0☐
b.	Difficulty breathing, fast breathing	1☐	0☐	h.	Pain, aches	1☐	0☐
c.	Fever, headache, hot body	1☐	0☐	i.	Bleeding, burn, accident	1☐	0☐
d.	Convulsions, fits	1☐	0☐	j.	Do not know	1☐	0☐
e.	Could not sleep	1☐	0☐	k.	Other (please specify): _____	1☐	0☐
f.	Diarrhea, vomiting, nausea, could not eat	1☐	0☐				

8. How serious do you think this illness was? *Read the choices. Tick one box.*

1☐ Very Serious 2☐ Somewhat Serious 3☐ Not Serious

9. At any point, did ***(first name)*** (or anybody else on his/her behalf) seek care for this illness outside the home?

1☐ Yes 0☐ No → **if No, Skip to Question 11**

10. From which of the following sources of care did ***(first name)*** receive care at any time during the illness? *Read responses and tick one box for each of the categories:*

		Yes	No			Yes	No
a.	Public hospital	1☐	0☐	e.	ADDO	1☐	0☐
b.	Mission or NGO hospital	1☐	0☐	f.	Private pharmacy	1☐	0☐
c.	Public health center or dispensary	1☐	0☐	g.	Drug seller	1☐	0☐
d.	Private hospital, clinic or physician	1☐	0☐	h.	Friend or neighbor	1☐	0☐

11. Did he/she take any medicine during the acute illness, including medicines taken during hospitalisation?

1☐ Yes 0☐ No → **if No, Skip to Question 16**

12. Which medicines were taken during this illness?

Write one medicine per row, and use codes provided in each column to collect information about each medicine.

	A	B	C	D
	Medicine *Write name of medicine. If name is not known, write the most detailed category given by respondent ("antibiotic", "antimalaria", "for fever")*	**Route** *1 – oral 2 – injection 99 – other (specify)*	**Recommended/ prescribed by** *1 – self 2 – household member 3 – friend/ neighbour 4 – doctor/nurse 5 – ADDO 6 – pharmacist 7 – drug seller 99 – other (specify)*	**Obtained from** *1 – available at home 2 – friend or neighbour outside household 3 – public hospital 4 – NGO/mission hospital 5 – public health center 6 – private health care provider 7 – ADDO 8 – private pharmacy 9 – drug seller 99 – other (specify)*
Med 1				
Med 2				
Med 3				
Med 4				
Med 5				
Med 6				
Med 7				

13. How much did your household pay for medicines used to treat this illness? |_|_|_|_|_|_|_| *local currency*

14. Was this cost covered by health insurance? 1☐ Yes, entirely 2☐ Part of it was covered 0☐ No

15. Did ***(first name)*** take all medicines that were recommended or prescribed?

1☐ Yes → **if Yes, this one-page acute module is now complete, go back to Question 4** 0☐ No

16. *If answer to Questions 11 or 15 is No, ask the following question:* I am going to give you some possible reasons why ***(first name)*** did not take medicines. Can you tell me whether these were reasons why?

	Read statements, and tick one box for each statement	Yes	No
a.	Symptoms have gotten better	1☐	0☐
b.	Someone in the household decided medicines were not needed	1☐	0☐
c.	Someone advised not to take medicines	1☐	0☐
d.	Sick person had bad reactions to medicines in the past	1☐	0☐
e.	Someone in the household chose a different treatment	1☐	0☐
f.	The place where medicines can be obtained was too far away	1☐	0☐
g.	Medicines were not available at the public health care facility	1☐	0☐
h.	Medicines were not available at private pharmacy, ADDO, or drug seller	1☐	0☐
i.	No one in the household could take time to obtain medicines	1☐	0☐
j.	Our household could not afford the medicines	1☐	0☐
k.	Other (please specify): _____	1☐	0☐

→ **This one-page acute module is now complete. Go back to Question 4.**

Draft WHO/ADDO Household Survey on Access to and Use of Medicines

Survey Record Number ____ Facility ____ Household Number ____

CHRONIC

Sick Person Name: ____ Roster Number ____

17. Which chronic diseases does ***(first name)*** have? *Read responses. Tick one box for each disease mentioned.*

		Yes	No	Do not Know			Yes	No	Do not Know
a.	Hypertension, high blood pressure	1☐	0☐	99☐	i.	Stroke consequence	1☐	0☐	99☐
b.	Heart disease, heart attack consequence	1☐	0☐	99☐	j.	High cholesterol	1☐	0☐	99☐
c.	Diabetes, high blood sugar	1☐	0☐	99☐	k.	Cancer	1☐	0☐	99☐
d.	Asthma, wheezing, chronic difficulty breathing	1☐	0☐	99☐	l.	Tuberculosis	1☐	0☐	99☐
e.	HIV infection, AIDS	1☐	0☐	99☐	m.	Liver disease	1☐	0☐	99☐
f.	Arthritis, chronic body pain	1☐	0☐	99☐	n.	Depression	1☐	0☐	99☐
g.	Epilepsy, seizures, fits	1☐	0☐	99☐	o.	Other (please specify): _____	1☐	0☐	99☐
h.	Ulcer, chronic stomach pain	1☐	0☐	99☐					

18. Has ***(first name)*** been told by a doctor or other health care provider that he/she should be taking medicines to treat this disease?

1☐ Yes 0☐ No → **if No, this one-page chronic module is now complete, go back to Question 6.**

19. Which medicines has ***(first name)*** been told to take for this chronic disease and for any other condition?

Write one medicine per row, and use codes provided in each column to collect information about each medicine.

	A	B	C	D	E	
	Medicine *Write name of medicine. If name is not known, write the most detailed category given by respondent ("antibiotic", "antidepressant", "for diabetes")*	**Condition for which medicine was recommended** *Write code provided in Question 17 (i.e. letter a. for hypertension…) Write "X" if unknown*	**Number of days of supply usually obtained** *In days Write "0" if medicine is not obtained regularly.*	**Cost for last month** *In local currency Write "0" if not obtained regularly or obtained free.*	**Any amount of last month cost covered by insurance?** *Tick Yes if insurance covers part or all cost. Tick No if not covered or cost not covered by insurance.*	
Med 1					1☐ Yes	0☐ No
Med 2					1☐ Yes	0☐ No
Med 3					1☐ Yes	0☐ No
Med 4					1☐ Yes	0☐ No
Med 5					1☐ Yes	0☐ No
Med 6					1☐ Yes	0☐ No
Med 7					1☐ Yes	0☐ No
Med 8					1☐ Yes	0☐ No
Med 9					1☐ Yes	0☐ No
All Medicines	*Ask for the total cost of medicines only if the cost of each medicine is not known*					

20. Sometimes people cannot take all medicines as directed. Does ***(first name)*** usually take all medicines as recommended?

1☐ Yes → **if Yes, this one-page chronic module is now complete, go back to Question 6** 0☐ No

21. *If answer to Question 20 is No, ask the following question:* I am going to give you some possible reasons why ***(first name)*** may not always take medicines as recommended. Can you tell me whether these are the reasons why he/she does not take medicines?

	Read statements, and tick one box for each statement.	Yes	No
a.	Symptoms have gotten better	1☐	0☐
b.	Someone in the household decided medicines were not needed	1☐	0☐
c.	Someone advised not to take medicines	1☐	0☐
d.	Sick person had bad reactions to medicines in the past	1☐	0☐
e.	Someone in the household chose a different treatment	1☐	0☐
f.	The place where medicines can be obtained is too far away	1☐	0☐
g.	Medicines are not available at the public health care facility	1☐	0☐
h.	Medicines are not available at private pharmacy, ADDO, or drug seller	1☐	0☐
i.	No one in the household can take time to obtain medicines	1☐	0☐
j.	Our household cannot afford the medicines	1☐	0☐
k.	Other (please specify): _____	1☐	0☐

→ **This one-page chronic module is now complete. Go back to Question 6.**

Draft WHO/ADDO Household Survey on Access to and Use of Medicines

Survey Record Number ☐☐☐☐ Facility _____ Household Number ☐☐

Access to and Use of Medicines - Part Three: Household Medicines

22. Do you have any medicines available at home today?
1☐ Yes 0☐ No → **if No, Skip to Question 24**

23. Can I please see all of them? *Write one medicine per row, and use codes provided in each column to collect information about each medicine.*

	A	B		C	D		E	
	Medicine	**Obtained from**		**In home because**	**Label OK**		**Primary Package OK**	
	Write name of medicine. If name is not known, write the most detailed category given by respondent ("antibiotic", "antimalaria", "for fever")	*1–family, friend; 2–public hospital; 3–NGO/mission hospital; 4–public health center or dispensary; 5–private health care provider; 6–ADDO; 7–private pharmacy; 8–drug seller; 99–other (specify)*		*1–current treatment; 2–left from past treatment; 3–anticipate future need*	*Tick Yes if label includes medicine name, dose, and expiration date. Otherwise tick No*		*Tick Yes if primary package is an envelope or a closable container, and if it contains only one medicine. Otherwise tick No*	
Med 1					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 2					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 3					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 4					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 5					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 6					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 7					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 8					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 9					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 10					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 11					1☐Yes	0☐ No	1☐Yes	0☐ No
Med 12					1☐Yes	0☐ No	1☐Yes	0☐ No

Access and Use of Medicines - Part Four: Opinions about Obtaining Medicines

24. I am going to read you a series of opinions about price and quality of medicines. For each opinion, please tell me whether you agree or disagree. *Do not read the option "Do not know". Tick it if the respondent does not want to answer or is unable to choose between "agree" and "disagree". Read statements & tick one box for each statement.*

		Agree	Disagree	Do not know
a.	In my public facility, health providers take into account our ability to pay when they decide which medicines to prescribe.	1☐	2☐	3☐
b.	In the ADDO, the attendant takes into account our ability to pay when they decide which medicines to sell.	1☐	2☐	3☐
c.	When I receive a prescription, I am comfortable asking how much the medicines will cost.	1☐	2☐	3☐
d.	It is easy for me to find out how much medicines cost.	1☐	2☐	3☐
e.	Two identical medicines may be sold at different prices.	1☐	2☐	3☐
f.	I know where to find medicines at the lowest price in my neighborhood.	1☐	2☐	3☐
g.	When I buy a medicine, I ask for the least expensive product.	1☐	2☐	3☐
h.	When the ADDO staff recommends a medicine, I can be sure that it is the best value for money.	1☐	2☐	3☐
i.	When the ADDO staff recommends a medicine, I can be sure that it is of good quality.	1☐	2☐	3☐
j.	Medicines of better quality are more expensive.	1☐	2☐	3☐
k.	There are places in my neighborhood where I would never buy medicines because they sell medicines of poor quality.	1☐	2☐	3☐
l.	My household would obtain medicines at the ADDO if insurance reimbursed their cost.	1☐	2☐	3☐
m.	Different names may be used for the same medicine.	1☐	2☐	3☐
n.	I have heard the word "generic" before to describe a medicine.	1☐	2☐	3☐
	→If respondent has not heard about generics or does not know, Skip to Question 25			
o.	A generic medicine is usually lower in quality than a brand medicine.	1☐	2☐	3☐
p.	A generic medicine is usually lower in price than a brand medicine.	1☐	2☐	3☐

Survey Record Number ☐☐☐☐ Facility _____ Household Number ☐☐

Access to and Use of Medicines - Part Five: Experiences about Care and Medicines

I am going to read you a series of opinions about three topics related to care and medicines: access, affordability, and quality. There are no correct answers. For each opinion, please tell me whether you agree or disagree. *Do not read the option "Do not know". Tick it if the respondent does not want to answer or is unable to choose between "agree" and "disagree". Read statements, and tick one box for each statement.*

	25. The first set of opinions is about access to care and medicines.	Agree	Disagree	Do not know
a.	The waiting time at my public health care facility is too long.	1☐	2☐	3☐
b.	My public health care facility usually has the medicines we need.	1☐	2☐	3☐
c.	The most convenient place to seek care in my neighborhood is the ADDO.	1☐	2☐	3☐
d.	The ADDO closest to my household usually has the medicines my household needs.	1☐	2☐	3☐
	26. The second set of opinions is about affordability of medicines.	**Agree**	**Disagree**	**Do not know**
a.	My household can get free medicines at the public health care facility.	1☐	2☐	3☐
b.	Medicines are more expensive at ADDOs than at the public health care facility.	1☐	2☐	3☐
c.	My household can usually get credit from the ADDO if we need to.	1☐	2☐	3☐
d.	My household can usually afford to buy the medicines we need.	1☐	2☐	3☐
e.	In the past, my household had to borrow money or sell things to pay for medicines.	1☐	2☐	3☐
	27. The last set of opinions is about quality of care and medicines.	**Agree**	**Disagree**	**Do not know**
a.	The quality of care and services delivered at ADDOs in my neighborhood is good.	1☐	2☐	3☐
b.	The quality of services delivered by my public health care facility is good.	1☐	2☐	3☐
c.	I trust the ADDO attendant to give the right advice for treatment.	1☐	2☐	3☐
d.	I can always obtain antibiotics at the ADDO when I need them.	1☐	2☐	3☐

Access to and Use of Medicines - Part Six: Assets and Medicines Expenditures

Finally I would like to ask a few questions about the possessions that are in your home and how much your household spends. Remember that any information you provide will be kept confidential.

28. Can you please tell me how many rooms (bedrooms, dining room, kitchen …) are in your home? ☐☐ Rooms

29. Does anyone in your household have: (*Items are country-specific. These items should be identified and listed before the survey by referring to Section 4.3. of the manual*)

		Yes	No			Yes	No			Yes	No
a.	Item 1	1☐	0☐	c.	Item 3	1☐	0☐	e.	Item 5	1☐	0☐
b.	Item 2	1☐	0☐	d.	Item 4	1☐	0☐	f.	Item 6	1☐	0☐

30. Does your household have:

a. Tap/running water inside house: 1☐ Yes 0☐ No
b. Toilet: 1☐ Yes, its own 2☐ Yes, shared 0☐ No
c. Electric power network: 1☐ Yes 0☐ No
→If no electric power network, Skip to Question 32

31. Does anyone in your household have: (*Electricity-dependent items are country-specific. These items should be identified and listed before the survey by referring to Section 4.3 of the manual*)

		Yes	No			Yes	No			Yes	No
a.	Item 7	1☐	0☐	c.	Item 9	1☐	0☐	e.	Item 11	1☐	0☐
b.	Item 8	1☐	0☐	d.	Item 10	1☐	0☐				

32. In the last week, how much did your household spend on food? Include the value of any food produced and consumed by the household; exclude alcohol, tobacco, and restaurant meals: ☐☐☐☐☐☐ *in local currency*

33. I will now give you five different levels of spending. Please choose the level that is closest to what your household spent in total over the past 4 weeks. *(Read ranges of expenditures corresponding to the size of this household: A, B, C, D, E are expressed in local currency, and can be found in Annex 3 of the manual)*
1☐ A 2☐ B 3☐ C 4☐ D 5☐ E

34. Can you provide the actual total amount? 1☐ Yes, ☐☐☐☐☐☐ *in local currency* 0☐ No

35. In the last 4 weeks, how much did your household spend on:

a. Care that required staying overnight in a hospital or health care facility ☐☐☐☐☐☐ *in local currency*
b. Medicines ☐☐☐☐☐☐ *in local currency*
c. Any other health care products or services that were not included above: (outpatient visits, lab tests, x-rays, dentist, ear & eye care…) ☐☐☐☐☐☐ *in local currency*
d. Voluntary health insurance premiums or other prepaid health plans ☐☐☐☐☐☐ *in local currency*

36. Does anyone in your household earn money? 1☐ Yes 0☐ No →**If No, Stop.**

37. If yes, who is the main earner in the household? *Write his/her roster number here:* ☐☐

Thank the interviewed person and reassure about the confidentiality of his/her answers.

Access and Use of Medicines - Part Four: Opinions about Obtaining Medicines

24. I am going to read you a series of opinions about price and quality of medicines. For each opinion, please tell me whether you agree or disagree. *Do not read the option "Do not know". Tick it if the respondent does not want to answer or is unable to choose between "agree" and "disagree". Read statements & tick one box for each statement.*

		Agree	Disagree	Do not know
a.	In my public facility, health providers take into account our ability to pay when they decide which medicines to prescribe.	1☐	2☐	3☐
b.	In the ADDO, the attendant takes into account our ability to pay when they decide which medicines to sell.	1☐	2☐	3☐
c.	When I receive a prescription, I am comfortable asking how much the medicines will cost.	1☐	2☐	3☐
d.	It is easy for me to find out how much medicines cost.	1☐	2☐	3☐
e.	Two identical medicines may be sold at different prices.	1☐	2☐	3☐
f.	I know where to find medicines at the lowest price in my neighborhood.	1☐	2☐	3☐
g.	When I buy a medicine, I ask for the least expensive product.	1☐	2☐	3☐
h.	When the ADDO staff recommends a medicine, I can be sure that it is the best value for money.	1☐	2☐	3☐
i.	When the ADDO staff recommends a medicine, I can be sure that it is of good quality.	1☐	2☐	3☐
j.	Medicines of better quality are more expensive.	1☐	2☐	3☐
k.	There are places in my neighborhood where I would never buy medicines because they sell medicines of poor quality.	1☐	2☐	3☐
l.	My household would obtain medicines at the ADDO if insurance reimbursed their cost.	1☐	2☐	3☐
m.	Different names may be used for the same medicine.	1☐	2☐	3☐
n.	I have heard the word "generic" before to describe a medicine.	1☐	2☐	3☐
	→If respondent has not heard about generics or does not know, Skip to Question 25			
o.	A generic medicine is usually lower in quality than a brand medicine.	1☐	2☐	3☐
p.	A generic medicine is usually lower in price than a brand medicine.	1☐	2☐	3☐

Access to and Use of Medicines - Part Five: Experiences about Care and Medicines

I am going to read you a series of opinions about three topics related to care and medicines: access, affordability, and quality. There are no correct answers. For each opinion, please tell me whether you agree or disagree. *Do not read the option "Do not know". Tick it if the respondent does not want to answer or is unable to choose between "agree" and "disagree". Read statements, and tick one box for each statement.*

		Agree	Disagree	Do not know
25.	The first set of opinions is about access to care and medicines.			
a.	The waiting time at my public health care facility is too long.	1☐	2☐	3☐
b.	My public health care facility usually has the medicines we need.	1☐	2☐	3☐
c.	The most convenient place to seek care in my neighborhood is the ADDO.	1☐	2☐	3☐
d.	The ADDO closest to my household usually has the medicines my household needs.	1☐	2☐	3☐
26.	The second set of opinions is about affordability of medicines.	**Agree**	**Disagree**	**Do not know**
a.	My household can get free medicines at the public health care facility.	1☐	2☐	3☐
b.	Medicines are more expensive at ADDOs than at the public health care facility.	1☐	2☐	3☐
c.	My household can usually get credit from the ADDO if we need to.	1☐	2☐	3☐
d.	My household can usually afford to buy the medicines we need.	1☐	2☐	3☐
e.	In the past, my household had to borrow money or sell things to pay for medicines.	1☐	2☐	3☐
27.	The last set of opinions is about quality of care and medicines.	**Agree**	**Disagree**	**Do not know**
a.	The quality of care and services delivered at ADDOs in my neighborhood is good.	1☐	2☐	3☐
b.	The quality of services delivered by my public health care facility is good.	1☐	2☐	3☐
c.	I trust the ADDO attendant to give the right advice for treatment.	1☐	2☐	3☐
d.	I can always obtain antibiotics at the ADDO when I need them.	1☐	2☐	3☐

Annex 11 Illustrative Data Flow for ADDO Phone Monitoring

First screen:

Generic name, dosage form, strength**: (prefilled)**

1. Any product available: Y/N
2. Comments (optional): _____ End

Second screen if answer to question 1 on the first screen is "Y":

Generic name, dosage form, strength**: (prefilled)**

1. Most dispensed product during past month[3]: _____
2. Manufacturer: _____
3. Unit[4] retail price: xxxx/xx TZS
4. How many units did you purchase from **(prefilled date)** to **(prefilled date)**[5]: _____

[3] A drop-down menu should be used for entering the name of each tracer. The menu will list all products registered in Tanzania for a given tracer medicine. The menu will also include an option "other". If "other" is selected, the option "Enter name: _____" will be displayed.

[4] NHIF unit definition will be used for price reporting and analysis. For price data collection, the wording of the question will be tailored to the dosage form of the tracer medicine. The price of non-liquid forms will be displayed as "tab price" or "cap price". For liquid formulations, the question will be split in two parts (i.e., "bottle price" and "bottle volume").

[5] Dates to cover the past month