**Project Title: Industrial Productivity, Health Sector Performance and Policy Synergies for Inclusive Growth: A Study in Tanzania and Kenya**

Project code: ES/J008737/1

**Background notes on the quantitative data**

**Study sites and sample characteristics**

Data collection on supply chains for essential medicines and medical supplies to health facilities and shops was undertaken in four districts in three regions of Tanzania and four districts in three counties in Kenya.

In Tanzania, three regions were selected: the country’s commercial capital, Dar es Salaam, and two other regions. Within these regions, four districts were purposively chosen to represent a range of income and geographical location, including level of urbanisation and distance from wholesaling centres. In each district, with the cooperation of the district authorities, three wards were purposively sampled, including one in the commercial and administrative centre, and two more distant. All but the Dar es Salaam wards were semi-urban or rural in character. Within these wards, health facilities were sampled from available lists, to include the district hospital and other private, faith-based and public facilities, plus private shops. In Tanzania, the shops include Accredited Drug Dispensing Outlets (ADDOs), that is regulated drug sellers, and also other drug shops and pharmacies. In Tanzania the data set consists of 32 facilities and 10 pharmacies/shops.

In Kenya, three counties were chosen, including the capital city, Nairobi, to include very divergent geographical locations including a coastal county and one other predominantly rural county. In Nairobi, two districts were selected to include a high income district containing some private hospitals, and a lower income area. In the other two counties districts were purposively selected to represent different socio-economic makeup, density of settlement, level of geographical accessibility or isolation, and income levels. With the assistance of the district authorities, health facilities were sampled from available lists, to include the district hospital and other private, faith-based and public facilities, plus private pharmacies and drug shops. In Kenya the data set includes 34 health facilities and 21 pharmacies and shops. In each country, one district is close to the Kenya/Tanzania border, to allow investigation of cross-border supply chains. Not all facilities and shops were willing to provide complete data.

**Data sets**

The anonymisation of the data sets includes concealment of the geographical locations in each country. This is to ensure that the identities of the district public hospitals – included in each district – in particular, and also other facilities and larger pharmacies, are not identifiable.

The quantitative data set records data for each country from responses to three questionnaires (see Research Instruments). The broad format and structure of these were the same across countries, but the details were adapted to reflect local conditions. In particular, the lists of tracer medicines and other supplies were compiled on the basis of expert advice in each country, and differ somewhat between countries to reflect country differences in treatment guidelines and type of other health-related supplies used.

1. Consent forms with facility/shop and interviewee details.

In each country one consent form was administered for each interviewee; there were multiple interviewees in some facilities and shops, notably in the larger hospitals. The Interviewee data set for each country extracts from these forms the basic data on facility or shop : type of facility or shop, district code, sector (public, faith-based, private), and rural or urban location. In addition, each interviewee’s role or position is recorded, along with the extent to which they have any procurement training.

1. Tracer essential medicines data collection forms

For each facility and shop, this questionnaire collected the following information for each of a set of tracer medicines identified by generic name and dosage form: availability on the day of the visit, manufacturer and country of manufacture, wholesale source, and buying and selling prices. The data set identifies manufacturers which appeared more than 5 times in the data in a given country, and lists the others (some of which were unclear) under “other”. The country of manufacture was collected along with the manufacturer from packaging where possible: there are some gaps and not all sources were clearly recorded. The wholesale source sector only (government, faith-based and private) is recorded in the data set; the names of the wholesalers have been removed since they often identify locations. Many interviewees were willing to provide either buying or selling prices but not both. In Kenya, the public facilities received medicines from the public wholesaler free of charge and generally did not charge patients; faith -based organisations (FBOs) and NGO facilities sometimes charged a flat rate including medicines, so no separate medicines price is recorded. In Tanzania, many public health facilities charge for medicines although exempted categories include children under 5, pregnant women and the elderly.

1. Tracer essential health sector supplies data collection forms

For each facility and shop, this questionnaire collected the following information for each of a set of essential medical supplies, laboratory supplies, basic equipment and other essentials such as cleaning supplies: availability on the day of the visit, manufacturer and country of manufacture, wholesale source, and buying and selling prices. These data were substantially more difficult to identify than the equivalent medicines data. The data set identifies manufacturers which appeared more than 5 times in the data in a given country, and lists the others (some of which were unclear) under “other”. The country of manufacture was collected along with the manufacturer from packaging where possible: there are many gaps since sources were frequently not recorded. The wholesale source sector for this data set includes direct donations as a separate source (government, donations, faith-based and private) since equipment is frequently sourced in this way. The names of the wholesalers have been removed since they often identify locations.

**Data collection methods**

Ethical approval was gained from the Human Research Ethics Committee at the Open University, UK; from the National Institute for Medical Research (NIMR) in Tanzania, and from the Kenyatta National Hospital/University of Kenya Ethics Research Committee. The questionnaires were prepared in English, and the consent forms and basic information sheets translated in each country into Kiswahili. The research was conducted largely in Kiswahili in Tanzania and in the coastal county in Kenya. In the rest of Kenya, the research was conducted mainly in English. (See also the Background Information for the qualitative data sets.)

The interviewees were, where possible, the people most centrally involved in procurement in each facility or shop. The data for tracer medicines and supplies was conducted in the appropriate location of each facility or shop, such as the store, pharmacy, laboratory or the office of the matron or nursing in-charge, where the relevant items could be located if available and their source identified.

Questionnaires attached:

* Tanzania: consent form and basic data
* Kenya: consent form and basic data
* Tanzania: tracer essential medicines data collection
* Kenya: tracer essential medicines data collection
* Tanzania: tracer other supplies data collection
* Kenya : tracer other supplies data collection

**Data set descriptions**

All data sets are prepared in Stata11. The value labels are listed under Variable Properties for each variable in each data set.

*Tanzania\_interviewees*

Observations: 79

Variables: 8

Variable list :

Interviewee\_ID : Interviewee ID number

Facilityshop\_ID : Facility or shop ID number

district : District code

level : Level of health facility or type of shop

sector : Sector of facility or shop

rural\_urban : Rural or urban location

position : Role or position of interviewee

Proc\_training : Procurement training of interviewee, if any.

*Kenya\_interviewees*

Observations: 81

Variables: 8

Variable list :

interviewee\_ID : Interviewee ID number

facility\_id: Facility or shop ID number

district : District code

level : Level of health facility or type of shop

sector : Sector of facility or shop

rural\_urban : Rural or urban location

position : Role or position of interviewee

procure\_tr : Procurement training of interviewee, if any.

*Tanzania­\_medicines*

Observations: 1021

Variables: 15

Variable list (first 5 variables cross-reference to *Tanzania\_interviewees*):

row : Data entry row number

facility\_ID : Facility or shop ID

district : District code

rural\_urban : Rural or urban location

sector : Sector of facility or shop

level : Level of facility or type of shop

medicine : Medicine name and strength

dosage : Dosage form

availability : Availability of medicine on day of visit

manufacturer : Name of manufacturer

country : Country of manufacture

source\_sector : Wholesale sector where medicine sourced

unit : Unit priced

buy\_price : Buying price per unit

sale\_price : Selling price per unit

*Kenya\_medicines*

Observations: 1721

Variables: 15

Variable list (first 5 variables cross-reference to *Kenya­\_interviewees*):

row : Data entry row number

facility\_ID : Facility or shop ID

district : District code

rural\_urban : Rural or urban location

sector : Sector of facility or shop

level : Level of facility or type of shop

medicine : Medicine name and strength

dosage : Dosage form

availability : Availability of medicine on day of visit

manufacturer : Name of manufacturer

country : Country of manufacture

source\_sector : Wholesale sector where medicine sourced

unit : Unit priced

buy\_price : Buying price per unit

sale\_price : Selling price per unit

*Tanzania\_othersupplies*

Observations: 1269

Variables: 14

Variable list (first 5 variables cross-reference to *Tanzania\_interviewees)*:

row : Data entry row number

facility\_ID : Facility or shop ID

district : District code

rural\_urban : Rural or urban location

level : Level of facility or type of shop

sector : Sector of facility or shop

item : Other supplies item name

availability : Availability of item on day of visit

manufacturer : Name of manufacturer

country : Country of manufacture

source\_sector : Wholesale sector where sourced

unit : Unit priced

buying\_price : Buying price per unit

sale\_price : Selling price per unit

*Kenya\_othersupplies*

Observations: 1799

Variables: 14

Variable list (first 5 variables cross-reference to *Kenya\_interviewees)*:

Row\_ID : Data entry row number

facility\_ID : Facility or shop ID

district : District code

rural\_urban : Rural or urban location

level : Level of facility or type of shop

sector : Sector of facility or shop

item : Other supplies item name

availability : Availability of item on day of visit

manufacturer : Name of manufacturer

country : Country of manufacture

source\_sector : Wholesale sector where sourced

unit : Unit priced

buy\_price : Buying price per unit

sale\_price : Selling price per unit

Note: in Kenya, the Widal reagent was being dropped, and the Bioline HIV test was being replaced by Unigold HIV test, at the time this study was being undertaken.