

# Kenya - Assessing the Educational Impact of Malaria Prevention in Kenyan Schools 2010-2012

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# Sampling

## Sampling Procedure

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School selection was made from the 197 government primary schools in Kwale and Msambweni districts. In Kwale district, a separate study is evaluating the impact of an alternative literacy intervention in two of the four zones; therefore only 20 schools in this district were included in our study allowing the two interventions to proceed without leakage. In Msambweni district, 81 of 112 schools were selected; schools 70 km or further away from the project office, were excluded due to logistical constraints.

The randomization of the 101 schools into the four experimental groups was conducted in two stages, each involving public randomization ceremonies:

### Stage 1 - Literacy intervention randomization

- a) Clusters of schools (groups of between 3-6 schools that meet and share information) were randomised either to receive the literacy intervention or to serve as a control schools.
- b) This randomization was stratified by (i) cluster size, to ensure equal numbers of schools in the experimental groups; and (ii) average primary school leaving exam scores across the cluster, to balance the two groups for school achievement.
- c) District officials and representatives from all 26 school clusters were invited to a meeting. Volunteers were asked to randomly draw envelopes each containing a cluster name from 10 pre-stratified ballot boxes and to sequentially place the envelopes in group A and group B.

### Stage 2 - Health intervention randomization

- a) The health intervention was randomly allocated amongst the 51 schools assigned to the literacy intervention and the 50 schools allocated to serve as control schools during the first randomization.
- b) Schools were stratified by average primary school leaving exam scores into 5 quintiles and by literacy intervention group, producing 10 strata overall.
- c) Representatives from the 101 schools and local communities were invited to this randomization ceremony. Volunteers were asked to draw envelopes from the 10 pre-stratified ballot boxes and sequentially place the envelopes in group 1 and group 2.

During January and February 2010, schools were visited and a census of all children in classes 1 and 5 was conducted, including children absent on the day of visit. This census served as a basis for making a random selection of 25 children with consent from class 1 and 30 children with consent from class 5. Fewer children were selected from class 1 because of the extra educational assessments undertaken with these children and the practical feasibility of conducting the tests in a single day. Some of the classes were small, and this meant that in these classes all children with consent were recruited.

Of the 5,233 children enrolled initially, 4,446 (85.0%) were included in the 12 month follow-up health survey and 4201 (80.3%) were included in the 24 month health survey. Overall, 4,656 (89.0%) of children were included in the 9 month follow-up education survey and 4,106 (78.5%) in the 24 month follow-up survey.

# Questionnaires

## Overview

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The following questionnaires and forms are available:

### 1) School Questionnaire

The school questionnaire is administered to the head teachers of each school during the initial school selection; if absent, the deputy head was interviewed. Information is collected on the characteristics of the school such as the number of boys and girls enrolled in each class, examination results in English, mathematics and Kiswahili, school features such as number of desks and teachers, facilities available such as latrines and the presence of school health activities and materials. Locations of each school were mapped using a handheld Global Positioning System (GPS) receiver, (eTrex Garmin Ltd., Olathe, KS).

### 2) Parent questionnaire for class 1 students

The parent questionnaire for class 1 students assesses the educational and socio-economic environment of the children's households. This is administered to the parent or guardian at the time of consent. Questions relate to their own reading ability, schooling, and involvement in their children's school, as well as questions on family composition, household construction, asset ownership and mosquito net ownership and use.

### 3) Parent questionnaire for class 5 students

The parent questionnaire for class 5 students assesses the educational and socio-economic environment of the children's households. This is administered to the parent or guardian at the time of consent. The section on education environment is reduced as the literacy intervention was focused on the class 1 children, so a less extensive knowledge of attitudes to education was required for parents of class 5 children. Questions relate to their schooling level achieved, as well as questions on family composition, household construction, asset ownership, and mosquito net ownership and use.

### 4) Nurse survey form for classes 1 and 5

The child ID, child name, and parent name of the randomly selected children are already entered on the form before arrival at the school. The nurse records the attendance of each child, completing the reasons using the codes at the bottom of the form. Height, weight and temperature of each child is recorded on the form. The child is also asked their age, which is recorded.

### 5) Health Technician survey form for classes 1 and 5

The child ID, child name, and parent name of the randomly selected children are already entered on the form before arrival at the school. The technician notes whether the child is present, and then records the hemoglobin reading, whether or not a blood slide has been taken, and the timing and result of the malaria rapid diagnostic test (RDT). This form is for assessment of children in the intervention schools where *P falciparum* infection is assessed.

## Data Collection

### Data Collection Dates

| Start | End  | Cycle |
|-------|------|-------|
| 2010  | 2012 | N/A   |

### Data Collection Mode

Face-to-face [f2f]

#### DATA COLLECTION NOTES

The study was approved by the Kenya Medical Research Institute and National Ethics Review Committee (SSC No. 1543), the London School of Hygiene & Tropical Medicine Ethics Committee (5503), and the Harvard University Committee on the Use of Human Subjects in Research (F17578-101). Prior to the randomization, meetings were held with community and school leaders and parents/guardians in each school to explain the study objectives and procedures. Parents/guardians of all children in class 1 and 5 were requested to provide individual written informed consent and they were given the option to withdraw their child from the study at any time. Prior to every IST round or assessment the procedures were explained to the children and they were required to provide verbal assent. An independent data monitoring committee reviewed the trial protocol, data analysis plan and preliminary results.

#### Follow-up

Cross sectional health surveys were carried out at 12 and 24 months. During these surveys, temperature, weight and height were measured and a finger prick blood sample was collected for determination of malaria parasitaemia and Hb. Children with an axillary temperature  $\geq 37.5^{\circ}\text{C}$  were tested using a RDT, providing an on the spot diagnosis for malaria and treatment was administered as per national guidelines.

#### Laboratory methods

Hb was measured using a portable haemoglobinometer (Hemocue, ngelholm, Sweden). Thick and thin blood films were stained with Giemsa, asexual parasites were counted against 200 white blood cells (WBC), and parasite density was estimated assuming an average WBC count of 8000 cells/L. A smear was considered negative after reviewing 100 high-powered fields. Thin blood smears were reviewed for species identification. All blood slides were read independently by two microscopists who were blinded to group allocation. Discrepant results were resolved by a third microscopist.

#### Attention and educational achievement

Tests of sustained attention and educational achievement were administered at baseline, 9 months and 24 months. Sustained attention was a primary outcome. This was assessed through the code transmission test, adapted from the TEA-Ch (Tests of everyday attention for children) battery.

The secondary outcome of educational achievement was measured through tests of literacy and numeracy. Literacy was assessed through group administered English spelling tests, adapted from PALS (Phonological Awareness Literacy Screening), with the younger classes asked to spell five 3-letter words and credit given for phonetically acceptable choices for each letter and the older classes asked to spell 25 words with credit given for correctly spelling the features and sound combinations of the word. Numeracy assessments involved an oral test of basic arithmetic for younger children at baseline and 9 month follow-up and written arithmetic at 24 month follow-up and a written arithmetic test throughout for older children. All educational assessments were piloted prior to use in the baseline and follow-up evaluations.

### Data Collectors

| Name                             | Abbreviation | Affiliation |
|----------------------------------|--------------|-------------|
| Kenya Medical Research Institute | KEMRI        |             |

# Data Processing

## Other Processing

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Data were double-entered, consistency checks were performed and all analysis was conducted using Stata software version 12.1. The pre-specified primary outcome measure was the prevalence of anaemia, defined according to age and sex corrected World Health Organisation (WHO) thresholds: haemoglobin concentration <110g/l in children under 5 years; <115g/l in children 5 to 11 years; <120g/l in females 12 years and over and males 12 to 15 years old; and <130g/l in males over 15 years, with no adjustment made for altitude. The pre-specified secondary outcomes were the prevalence of *P.falciparum*, scores for code transmission, spelling and arithmetic. Reported information on ownership of household assets and household construction was used to construct wealth indices using principal component analysis [43] and resulting scores were divided into quintiles.

Anthropometric measurements were processed using the WHO Anthroplus Stata macro to derive indicators of stunting, wasting and underweight.

# Data Appraisal

No content available

## **File Description**

# Variable List

**microdata\_IST\_IE\_data\_041113\_Stata12**

Content  
Cases 18703  
Variable(s) 105  
Structure Type:  
Keys: ()  
Version  
Producer  
Missing Data

**Variables**

| ID  | Name                          | Label  | Type     | Format    | Question |
|-----|-------------------------------|--|----------|-----------|----------|
| V1  | sch_id                        |  | discrete | numeric   |          |
| V2  | child_id                      | Child ID   | discrete | numeric   |          |
| V3  | indicator                     |  | discrete | numeric   |          |
| V4  | study_grp                     | Intervention group   | discrete | numeric   |          |
| V5  | MAL_grp                       | Malaria intervention   | discrete | numeric   |          |
| V6  | LIT_grp                       | Literacy intervention  | discrete | numeric   |          |
| V7  | class_m                       | Class  | discrete | numeric   |          |
| V8  | refused                       | parent refused consent   | discrete | numeric   |          |
| V9  | consent                       | child has consent  | discrete | numeric   |          |
| V10 | study_child                   | Study child (i.e. >1 educ task + anaemia (all schools) + slide (malaria int sch  | discrete | numeric   |          |
| V11 | withdrawn                     | Withdrawn during study   | discrete | numeric   |          |
| V12 | final_withdraw_date_formatted | Withdrawal date (formatted) - FINAL  | discrete | character |          |
| V13 | dead                          | Died during follow-up  | discrete | numeric   |          |
| V14 | date_death_final_formatted    | Date of death (approx) - formatted   | discrete | character |          |
| V15 | withdrawn_dead                | Study child: dead or withdrawn during follow-up                                  | discrete | numeric   |          |
| V16 | bl_edassess                   | BL Ed assessed (C1+C5)   | discrete | numeric   |          |
| V17 | withdrawn_bl                  | child withdrawn at baseline data collection                                      | discrete | numeric   |          |
| V18 | bl_hlthassess                 | Health assessed i.e. anaemia (& fal if MAL INT) at baseline (only for those not  | discrete | numeric   |          |
| V19 | FU1_edassess                  | Study child + not withdrawn/dead FU1 educ + FU1 Ed assessed (C1+C5)              | discrete | numeric   |          |
| V20 | FU1_hlthassess                | Study child + not withdrawn/dead FU1 health + anaemia or falciparum (i.e. at lea | discrete | numeric   |          |
| V21 | FU2_edassess                  | FU2 educ (spell or attention or numeracy) available (accounting for withdrawals  | discrete | numeric   |          |
| V22 | FU2_hlthassess                | Study child + not withdrawn/dead at FU2 health + anaemia or falciparum (i.e. at  | discrete | numeric   |          |
| V23 | age_child                     | Age at BL (TO BE USED FOR ANALYSIS)  | discrete | numeric   |          |
| V24 | age_cat2                      | Age cat (child-reported) - used in BL paper                                      | discrete | numeric   |          |
| V25 | age_child_fu1                 | age at FU1   | discrete | numeric   |          |

| ID  | Name                       | Label   | Type     | Format    | Question |
|-----|----------------------------|---|----------|-----------|----------|
| V26 | age_child_fu2              | age at FU2  | discrete | numeric   |          |
| V27 | sex                        | Sex   | discrete | numeric   |          |
| V28 | BL_numeracy_younger        | Class 1 Arithmetic: Addition (score: 0-30)                                | discrete | numeric   |          |
| V29 | BL_numeracy_older          | Class 5 Numeracy: written numeracy (score: 0-38)                          | contin   | numeric   |          |
| V30 | BL_attention_younger       | Class 1 Attention: Pencil tap   | discrete | numeric   |          |
| V31 | BL_attention_older         | Class 5 Attention: Double digit code transmision (score: 0-20)            | discrete | numeric   |          |
| V32 | BL_spelling_younger        | Class 1 Literacy: Spelling(score: 0-20)                                   | discrete | numeric   |          |
| V33 | BL_spelling_older          | Class 5 Literacy: Spelling - ftr pts + total worlds correct (score: 0-78) | contin   | numeric   |          |
| V34 | BL_hb                      | baseline haemoglobin concentration  | contin   | numeric   |          |
| V35 | BL_malaria                 | baseline RDT result   | discrete | numeric   |          |
| V36 | BL_height                  | baseline height in cm   | contin   | numeric   |          |
| V37 | BL_weight                  | baseline weight in kg   | contin   | numeric   |          |
| V38 | BL_temp                    | baseline auxiliary temperature in celcius                                 | contin   | numeric   |          |
| V39 | BL_falciparum              | P.falciparum (positive by both microscopy readers or resolved by 3rd)     | discrete | numeric   |          |
| V40 | BL_anaemia                 | Anaemia (based on child-reported age at baseline)                         | discrete | numeric   |          |
| V41 | BL_stunted                 | child is stunted?   | discrete | numeric   |          |
| V42 | BL_underweight             | child is underweight?   | discrete | numeric   |          |
| V43 | BL_thin                    | child is thin?  | discrete | numeric   |          |
| V44 | BL_anaemia_cat             | Anaemia category  | discrete | numeric   |          |
| V45 | BL_anaemia_mild_mod_severe | Mild-moderate-severe anaemia (<110 g/l)                                   | discrete | numeric   |          |
| V46 | BL_ses                     | Baseline SES (from PCA - as used in BL paper)                             | discrete | numeric   |          |
| V47 | net_child                  | Child sleeps under a net  | discrete | numeric   |          |
| V48 | lastnightnet_child         | Child sleeps under a net last night                                       | discrete | numeric   |          |
| V49 | bicycle                    | Household owns a bicycle  | discrete | numeric   |          |
| V50 | motorcycle                 | Household owns a motorcycle   | discrete | numeric   |          |
| V51 | radio                      | Household owns a radio  | discrete | numeric   |          |
| V52 | television                 | Household owns a TV   | discrete | numeric   |          |
| V53 | mobilephone                | Household owns a mobilephone  | discrete | numeric   |          |
| V54 | electricity                | Household has electricity   | discrete | numeric   |          |
| V55 | pitlatrine                 | Household has a pit latrine   | discrete | numeric   |          |
| V56 | sfp                        | School feeding programme  | discrete | numeric   |          |
| V57 | deworm                     | School deowrming done in last 12 months                                   | discrete | numeric   |          |
| V58 | mal_control                | Malaria control programme   | discrete | numeric   |          |
| V59 | division                   |   | discrete | numeric   |          |
| V60 | cluster                    | School-cluster (unit randomisation to literacy intervention)              | discrete | character |          |
| V61 | mal_pot                    | stratification for malaria group randomisation                            | discrete | numeric   |          |
| V62 | kcpemean_mal               | School mean exam score (2008)   | contin   | numeric   |          |
| V63 | cluster_size2              |   | discrete | numeric   |          |

| ID  | Name                            | Label  | Type     | Format  | Question |
|-----|---------------------------------|--|----------|---------|----------|
| V64 | cluster_KCPE_mean               | Cluster KCPE (mean of all schools in cluster)                                    | contin   | numeric |          |
| V65 | schlevel_comp                   | Education of household head  | discrete | numeric |          |
| V66 | crowding                        | number of people in house  | discrete | numeric |          |
| V67 | brick_walls                     | house has brick/cement walls?  | discrete | numeric |          |
| V68 | cement_floor                    | house has cement floors?   | discrete | numeric |          |
| V69 | iron_roof                       | house has iron/tile roof?  | discrete | numeric |          |
| V70 | cov_water                       | water supply for house?  | discrete | numeric |          |
| V71 | visit                           | Follow-up visit  | discrete | numeric |          |
| V72 | attention_younger               | Class 1 Attention FOR ANALYSIS: single digit code transmission                   | discrete | numeric |          |
| V73 | attention_older                 | Class 5 Attention FOR ANALYSIS: double digit code transmission                   | contin   | numeric |          |
| V74 | spelling_younger                | Class 1 Spelling FOR ANALYSIS (score: 0-20)                                      | discrete | numeric |          |
| V75 | spelling_older                  | Class 5 Spelling FOR ANALYSIS (score: 0-78)                                      | contin   | numeric |          |
| V76 | numeracy_younger                | Class 1 Numeracy FOR ANALYSIS: Arithmetic -addition(0-30 at FU1), written (0-38) | contin   | numeric |          |
| V77 | numeracy_older                  | Class 5 Numeracy FOR ANALYSIS: written (0-38)                                    | contin   | numeric |          |
| V78 | FU_health_status                | Health follow-up (0= neither; 1= FU1 only; 2 = FU2 only; 3 = both)               | discrete | numeric |          |
| V79 | FU_educ_status                  | Educ follow-up -spelling/attention/numeracy (0= neither; 1= FU1 only; 2 = FU2 o  | discrete | numeric |          |
| V80 | study_child_FU1_educ_analysis   | Study child with consent + not withdrawn/dead FU1 educ                           | discrete | numeric |          |
| V81 | study_child_FU1_health_analysis | Study child with consent + not withdrawn/dead FU1 health                         | discrete | numeric |          |
| V82 | study_child_FU2_analysis        | Study child with consent + not withdrawn/dead FU2 educ                           | discrete | numeric |          |
| V83 | FU_edassess                     | FU educ (spell, numer or attention), visit-specific (accounts withdraw/dead)     | discrete | numeric |          |
| V84 | FU_healthassess                 | FU health (Pf or anaemia), visit-specific (accounts withdrawn/dead)              | discrete | numeric |          |
| V85 | fu1_educ_withdrawn              | Withdrawn at FU1 educ analysis   | discrete | numeric |          |
| V86 | fu1_health_withdrawn            | Withdrawn at FU1 health analysis   | discrete | numeric |          |
| V87 | fu2_educ_withdrawn              | Withdrawn at FU2 educ analysis   | discrete | numeric |          |
| V88 | fu2_health_withdrawn            | Withdrawn at FU2 health analysis   | discrete | numeric |          |
| V89 | dead_9mth_educ                  | Death status at 9mth educ i.e. FU1 (for eventual deaths)                         | discrete | numeric |          |
| V90 | dead_12mth_health               | Death status at 12mth health i.e. FU1 (for eventual deaths)                      | discrete | numeric |          |
| V91 | dead_24mth_educ                 | Death status at 24mth educ i.e. FU2 (for eventual deaths)                        | discrete | numeric |          |
| V92 | dead_24mth_health               | Death status at 24mth health i.e. FU2 (for eventual deaths)                      | discrete | numeric |          |
| V93 | fal_categories_INFERRED_3grps   | BASELINE falciparum prev categories (using BL and FU1 data for INT and control)  | discrete | numeric |          |
| V94 | falciparum                      | P.falciparum (positive by both microscopy readers or resolved by 3rd)            | discrete | numeric |          |
| V95 | anaemia                         | Age-specific anaemia (using visit-specific age, based on child-reported BL age)  | discrete | numeric |          |
| V96 | anaemia_cat                     | Anaemia category   | discrete | numeric |          |

| <b>ID</b> | <b>Name</b>                 | <b>Label</b>   | <b>Type</b> | <b>Format</b> | <b>Question</b> |
|-----------|-----------------------------|--|-------------|---------------|-----------------|
| V97       | hb                          | haemoglobin concentration g/l                          | contin      | numeric       |                 |
| V98       | height                      | height in cm   | contin      | numeric       |                 |
| V99       | weight                      | weight in kg   | contin      | numeric       |                 |
| V100      | temp                        | axillary temperature in celcius                        | contin      | numeric       |                 |
| V101      | term_of_transfer            | First visit number of transfer                         | discrete    | numeric       |                 |
| V102      | FU1_ed_include_TRANSFER     | FU1 ed: study child not withdrawn/dead/transferred     | discrete    | numeric       |                 |
| V103      | FU1_health_include_TRANSFER | FU1 health: study child not withdrawn/dead/transferred | discrete    | numeric       |                 |
| V104      | FU2_ed_include_TRANSFER     | FU2 ed: study child not withdrawn/dead/transferred     | discrete    | numeric       |                 |
| V105      | FU2_health_include_TRANSFER | FU2 health: study child not withdrawn/dead/transferred | discrete    | numeric       |                 |



(sch\_id)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
Format: numeric  
Width: 4  
Decimals: 0  
Range: 1005-4162

Valid cases: 18703  
Invalid: 0

Child ID (child\_id)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
Format: numeric  
Width: 7  
Decimals: 0  
Range: 1005001-4162124

Valid cases: 18703  
Invalid: 0  
Minimum: 1005001  
Maximum: 4162124

(indicator)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 1-1

Valid cases: 13527  
Invalid: 5176

Intervention group (study\_grp)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 1-4

Valid cases: 18703  
Invalid: 0

Malaria intervention (MAL\_grp)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 18703  
Invalid: 0

## Literacy intervention (LIT\_grp)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 18703  
Invalid: 0

## Class (class\_m)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 1-5

Valid cases: 18703  
Invalid: 0

## parent refused consent (refused)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 18703  
Invalid: 0

## child has consent (consent)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 18703  
Invalid: 0

## Study child (i.e. >1 educ task + anaemia (all schools) + slide (malaria int sch (study\_child)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 18703  
Invalid: 0

## Withdrawn during study (withdrawn)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10409  
 Invalid: 8294

## Withdrawal date (formatted) - FINAL

(final\_withdraw\_date\_formatted)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: character  
 Width: 10

Valid cases: 157  
 Minimum: NaN  
 Maximum: NaN

## Died during follow-up (dead)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10409  
 Invalid: 8294

## Date of death (approx) - formatted (date\_death\_final\_formatted)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: character  
 Width: 10

Valid cases: 20

## Study child: dead or withdrawn during follow-up (withdrawn\_dead)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10409  
 Invalid: 8294

## BL Ed assessed (C1+C5) (bl\_edassess)

File: microdata\_IST\_IE\_data\_041113\_Stata12

## BL Ed assessed (C1+C5) (bl\_edassess)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 18703  
 Invalid: 0

## child withdrawn at baseline data collection (withdrawn\_bl)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 18703  
 Invalid: 0

## Health assessed i.e. anaemia (&amp; fal if MAL INT) at baseline (only for those not (bl\_hlthassess))

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 18703  
 Invalid: 0

## Study child + not withdrawn/dead FU1 educ + FU1 Ed assessed (C1+C5) (FU1\_edassess)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 18703  
 Invalid: 0

## Study child + not withdrawn/dead FU1 health + anaemia or falciparum (i.e. at lea (FU1\_hlthassess))

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Study child + not withdrawn/dead FU1 health + anaemia or falciparum (i.e. at lea (FU1\_hlthassess))

File: microdata\_IST\_IE\_data\_041113\_Stata12

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 18703  
Invalid: 0

FU2 educ (spell or attention or numeracy) available (accounting for withdrawals (FU2\_edassess))

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10409  
Invalid: 8294

Study child + not withdrawn/dead at FU2 health + anaemia or falciparum (i.e. at (FU2\_hlthassess))

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10409  
Invalid: 8294

Age at BL (TO BE USED FOR ANALYSIS) (age\_child)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 2  
Decimals: 0  
Range: 3-99

Valid cases: 13561  
Invalid: 5142  
Minimum: 3  
Maximum: 99

Age cat (child-reported) - used in BL paper (age\_cat2)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-2

Valid cases: 10409  
Invalid: 8294

## age at FU1 (age\_child\_fu1)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                 |                    |
|-----------------|--------------------|
| Type: Discrete  | Valid cases: 13561 |
| Format: numeric | Invalid: 5142      |
| Width: 3        | Minimum: 4         |
| Decimals: 0     | Maximum: 100       |
| Range: 4-100    |                    |

## age at FU2 (age\_child\_fu2)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                 |                    |
|-----------------|--------------------|
| Type: Discrete  | Valid cases: 13561 |
| Format: numeric | Invalid: 5142      |
| Width: 3        | Minimum: 5         |
| Decimals: 0     | Maximum: 101       |
| Range: 5-101    |                    |

## Sex (sex)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                 |                    |
|-----------------|--------------------|
| Type: Discrete  | Valid cases: 10409 |
| Format: numeric | Invalid: 8294      |
| Width: 1        |                    |
| Decimals: 0     |                    |
| Range: 1-2      |                    |

## Class 1 Arithmetic: Addition (score: 0-30) (BL\_numeracy\_younger)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                 |                   |
|-----------------|-------------------|
| Type: Discrete  | Valid cases: 4973 |
| Format: numeric | Invalid: 13730    |
| Width: 2        |                   |
| Decimals: 0     |                   |
| Range: 0-17     |                   |

Class 5 Numeracy: written numeracy (score: 0-38)  
(BL\_numeracy\_older)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                  |                   |
|------------------|-------------------|
| Type: Continuous | Valid cases: 5296 |
| Format: numeric  | Invalid: 13407    |
| Width: 2         | Minimum: 0        |
| Decimals: 0      | Maximum: 38       |
| Range: 0-38      |                   |

## Class 1 Attention: Pencil tap (BL\_attention\_younger)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 0-20

Valid cases: 4890  
 Invalid: 13813

Class 5 Attention: Double digit code transmission (score: 0-20)  
(BL\_attention\_older)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 0-20

Valid cases: 5329  
 Invalid: 13374

## Class 1 Literacy: Spelling(score: 0-20) (BL\_spelling\_younger)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 0-20

Valid cases: 4959  
 Invalid: 13744

Class 5 Literacy: Spelling - ftr pts + total worlds correct (score:  
0-78) (BL\_spelling\_older)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Continuous  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 0-63

Valid cases: 5301  
 Invalid: 13402  
 Minimum: 0  
 Maximum: 63

## baseline haemoglobin concentration (BL\_hb)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Continuous  
 Format: numeric  
 Width: 3  
 Decimals: 0  
 Range: 42-180

Valid cases: 9648  
 Invalid: 9055  
 Minimum: 42  
 Maximum: 180

## baseline RDT result (BL\_malaria)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                 |                   |
|-----------------|-------------------|
| Type: Discrete  | Valid cases: 4908 |
| Format: numeric | Invalid: 13795    |
| Width: 1        |                   |
| Decimals: 0     |                   |
| Range: 0-1      |                   |

## baseline height in cm (BL\_height)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                  |                   |
|------------------|-------------------|
| Type: Continuous | Valid cases: 9658 |
| Format: numeric  | Invalid: 9045     |
| Width: 4         | Minimum: 98.5     |
| Decimals: 0      | Maximum: 215      |
| Range: 98.5-215  |                   |

## baseline weight in kg (BL\_weight)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|  |                   |
|--|-------------------|
| Type: Continuous                         | Valid cases: 9658 |
| Format: numeric                          | Invalid: 9045     |
| Width: 16                                | Minimum: 10.4     |
| Decimals: 0                              | Maximum: 68.3     |
| Range: 10.3999996185303-68.3000030517578 |                   |

## baseline auxiliary temperature in celcius (BL\_temp)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                            |                   |
|----------------------------|-------------------|
| Type: Continuous           | Valid cases: 4874 |
| Format: numeric            | Invalid: 13829    |
| Width: 16                  | Minimum: 25       |
| Decimals: 0                | Maximum: 38.2     |
| Range: 25-38.2000007629394 |                   |

## P.falciparum (positive by both microscopy readers or resolved by 3rd) (BL\_falciparum)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                 |                   |
|-----------------|-------------------|
| Type: Discrete  | Valid cases: 4806 |
| Format: numeric | Invalid: 13897    |
| Width: 1        |                   |
| Decimals: 0     |                   |
| Range: 0-1      |                   |

## Anaemia (based on child-reported age at baseline) (BL\_anaemia)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 9648  
 Invalid: 9055

## child is stunted? (BL\_stunted)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 9676  
 Invalid: 9027

## child is underweight? (BL\_underweight)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 3893  
 Invalid: 14810

## child is thin? (BL\_thin)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 9674  
 Invalid: 9029

## Anaemia category (BL\_anaemia\_cat)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-3

Valid cases: 9648  
 Invalid: 9055

## Mild-moderate-severe anaemia (<110 g/l) (BL\_anaemia\_mild\_mod\_severe)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

|                 |                   |
|-----------------|-------------------|
| Type: Discrete  | Valid cases: 9648 |
| Format: numeric | Invalid: 9055     |
| Width: 1        |                   |
| Decimals: 0     |                   |
| Range: 0-1      |                   |

## Baseline SES (from PCA - as used in BL paper) (BL\_ses)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

|                 |                    |
|-----------------|--------------------|
| Type: Discrete  | Valid cases: 10282 |
| Format: numeric | Invalid: 8421      |
| Width: 1        |                    |
| Decimals: 0     |                    |
| Range: 1-5      |                    |

## Child sleeps under a net (net\_child)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

|                 |                    |
|-----------------|--------------------|
| Type: Discrete  | Valid cases: 10238 |
| Format: numeric | Invalid: 8465      |
| Width: 1        |                    |
| Decimals: 0     |                    |
| Range: 0-1      |                    |

## Child sleeps under a net last night (lastnightnet\_child)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

|                 |                   |
|-----------------|-------------------|
| Type: Discrete  | Valid cases: 6669 |
| Format: numeric | Invalid: 12034    |
| Width: 1        |                   |
| Decimals: 0     |                   |
| Range: 0-1      |                   |

## Household owns a bicycle (bicycle)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

|                 |                    |
|-----------------|--------------------|
| Type: Discrete  | Valid cases: 10282 |
| Format: numeric | Invalid: 8421      |
| Width: 1        |                    |
| Decimals: 0     |                    |
| Range: 0-1      |                    |

## Household owns a motorcycle (motorcycle)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10282  
Invalid: 8421

## Household owns a radio (radio)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10282  
Invalid: 8421

## Household owns a TV (television)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10282  
Invalid: 8421

## Household owns a mobilephone (mobilephone)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10282  
Invalid: 8421

## Household has electricity (electricity)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10282  
Invalid: 8421

## Household has a pit latrine (pitlatrine)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10282  
Invalid: 8421

## School feeding programme (sfp)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10409  
Invalid: 8294

## School deowrming done in last 12 months (deworm)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10409  
Invalid: 8294

## Malaria control programme (mal\_control)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10307  
Invalid: 8396

## (division)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 1-4

Valid cases: 10409  
Invalid: 8294

## School-cluster (unit randomisation to literacy intervention) (cluster)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

|                   |                    |
|-------------------|--------------------|
| Type: Discrete    | Valid cases: 10409 |
| Format: character | Invalid: 0         |
| Width: 13         |                    |

## stratification for malaria group randomisation (mal\_pot)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

|                 |                    |
|-----------------|--------------------|
| Type: Discrete  | Valid cases: 10409 |
| Format: numeric | Invalid: 8294      |
| Width: 2        |                    |
| Decimals: 0     |                    |
| Range: 1-10     |                    |

## School mean exam score (2008) (kcpemean\_mal)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

|  |                    |
|--|--------------------|
| Type: Continuous                         | Valid cases: 10409 |
| Format: numeric                          | Invalid: 8294      |
| Width: 16                                | Minimum: 166.7     |
| Decimals: 0                              | Maximum: 318.1     |
| Range: 166.662902832031-318.059997558594 |                    |

## (cluster\_size2)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

|                 |                    |
|-----------------|--------------------|
| Type: Discrete  | Valid cases: 10409 |
| Format: numeric | Invalid: 8294      |
| Width: 1        |                    |
| Decimals: 0     |                    |
| Range: 3-6      |                    |

## Cluster KCPE (mean of all schools in cluster) (cluster\_KCPE\_mean)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

|  |                    |
|--|--------------------|
| Type: Continuous                         | Valid cases: 10409 |
| Format: numeric                          | Invalid: 8294      |
| Width: 16                                | Minimum: 198.9     |
| Decimals: 0                              | Maximum: 249.4     |
| Range: 198.945236206055-249.380355834961 |                    |

## Education of household head (schlevel\_comp)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-3

Valid cases: 10232  
 Invalid: 8471

## number of people in house (crowding)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-4

Valid cases: 10240  
 Invalid: 8463

## house has brick/cement walls? (brick\_walls)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10282  
 Invalid: 8421

## house has cement floors? (cement\_floor)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10282  
 Invalid: 8421

## house has iron/tile roof? (iron\_roof)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10282  
 Invalid: 8421

## water supply for house? (cov\_water)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10280  
 Invalid: 8423

## Follow-up visit (visit)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 1-2

Valid cases: 10352  
 Invalid: 8351

## Class 1 Attention FOR ANALYSIS: single digit code transmission (attention\_younger)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 0-20

Valid cases: 4251  
 Invalid: 14452

## Class 5 Attention FOR ANALYSIS: double digit code transmission (attention\_older)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Continuous  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 0-20

Valid cases: 4470  
 Invalid: 14233  
 Minimum: 0  
 Maximum: 20

## Class 1 Spelling FOR ANALYSIS (score: 0-20) (spelling\_younger)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 2  
 Decimals: 0  
 Range: 0-20

Valid cases: 4253  
 Invalid: 14450

## Class 5 Spelling FOR ANALYSIS (score: 0-78) (spelling\_older)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                  |                   |
|------------------|-------------------|
| Type: Continuous | Valid cases: 4462 |
| Format: numeric  | Invalid: 14241    |
| Width: 2         | Minimum: 0        |
| Decimals: 0      | Maximum: 69       |
| Range: 0-69      |                   |

## Class 1 Numeracy FOR ANALYSIS: Arithmetic -addition(0-30 at FU1), written (0-38 (numeracy\_younger)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                  |                   |
|------------------|-------------------|
| Type: Continuous | Valid cases: 4256 |
| Format: numeric  | Invalid: 14447    |
| Width: 2         | Minimum: 0        |
| Decimals: 0      | Maximum: 29       |
| Range: 0-29      |                   |

## Class 5 Numeracy FOR ANALYSIS: written (0-38) (numeracy\_older)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                  |                   |
|------------------|-------------------|
| Type: Continuous | Valid cases: 4487 |
| Format: numeric  | Invalid: 14216    |
| Width: 2         | Minimum: 0        |
| Decimals: 0      | Maximum: 38       |
| Range: 0-38      |                   |

## Health follow-up (0= neither; 1= FU1 only; 2 = FU2 only; 3 = both) (FU\_health\_status)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

|                 |                    |
|-----------------|--------------------|
| Type: Discrete  | Valid cases: 10352 |
| Format: numeric | Invalid: 8351      |
| Width: 1        |                    |
| Decimals: 0     |                    |
| Range: 0-3      |                    |

## Educ follow-up -spelling/attention/numeracy (0= neither; 1= FU1 only; 2 = FU2 o (FU\_educ\_status)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Educ follow-up -spelling/attention/numeracy (0= neither; 1= FU1 only; 2 = FU2 o (FU\_educ\_status)

File: microdata\_IST\_IE\_data\_041113\_Stata12

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-3

Valid cases: 10352  
Invalid: 8351

Study child with consent + not withdrawn/dead FU1 educ (study\_child\_FU1\_educ\_analysis)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

Study child with consent + not withdrawn/dead FU1 health (study\_child\_FU1\_health\_analysis)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

Study child with consent + not withdrawn/dead FU2 educ (study\_child\_FU2\_analysis)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

FU educ (spell, numer or attention), visit-specific (accounts withdraw/dead) (FU\_edassess)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

FU educ (spell, numer or attention), visit-specific (accounts withdraw/dead) (FU\_edassess)

File: microdata\_IST\_IE\_data\_041113\_Stata12

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

FU health (Pf or anaemia), visit-specific (accounts withdrawn/dead) (FU\_healthassess)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

Withdrawn at FU1 educ analysis (fu1\_educ\_withdrawn)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

Withdrawn at FU1 health analysis (fu1\_health\_withdrawn)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

Withdrawn at FU2 educ analysis (fu2\_educ\_withdrawn)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

## Withdrawn at FU2 health analysis (fu2\_health\_withdrawn)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10352  
 Invalid: 8351

## Death status at 9mth educ i.e. FU1 (for eventual deaths)

(dead\_9mth\_educ)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10352  
 Invalid: 8351

## Death status at 12mth health i.e. FU1 (for eventual deaths)

(dead\_12mth\_health)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10352  
 Invalid: 8351

## Death status at 24mth educ i.e. FU2 (for eventual deaths)

(dead\_24mth\_educ)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 1  
 Decimals: 0  
 Range: 0-1

Valid cases: 10352  
 Invalid: 8351

## Death status at 24mth health i.e. FU2 (for eventual deaths)

(dead\_24mth\_health)

File: microdata\_IST\_IE\_data\_041113\_Stata12

**Overview**

## Death status at 24mth health i.e. FU2 (for eventual deaths) (dead\_24mth\_health)

File: microdata\_IST\_IE\_data\_041113\_Stata12

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

## BASELINE falciparum prev categories (using BL and FU1 data for INT and control) (fal\_categories\_INFERRED\_3grps)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 1-3

Valid cases: 10352  
Invalid: 8351

## P.falciparum (positive by both microscopy readers or resolved by 3rd) (falciparum)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 8522  
Invalid: 10181

## Age-specific anaemia (using visit-specific age, based on child-reported BL age) (anaemia)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 8643  
Invalid: 10060

## Anaemia category (anaemia\_cat)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

## Anaemia category (anaemia\_cat)

File: microdata\_IST\_IE\_data\_041113\_Stata12

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-3

Valid cases: 8643  
Invalid: 10060

## haemoglobin concentration g/l (hb)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Continuous  
Format: numeric  
Width: 3  
Decimals: 0  
Range: 0-174

Valid cases: 8643  
Invalid: 10060  
Minimum: 0  
Maximum: 174

## height in cm (height)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Continuous  
Format: numeric  
Width: 16  
Decimals: 0  
Range: 103-184.399993896484

Valid cases: 8660  
Invalid: 10043  
Minimum: 103  
Maximum: 184.4

## weight in kg (weight)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Continuous  
Format: numeric  
Width: 16  
Decimals: 0  
Range: 12-84.0999984741211

Valid cases: 8657  
Invalid: 10046  
Minimum: 12  
Maximum: 84.1

## axillary temperature in celcius (temp)

File: microdata\_IST\_IE\_data\_041113\_Stata12

### Overview

Type: Continuous  
Format: numeric  
Width: 16  
Decimals: 0  
Range: 26.3999996185303-44.5

Valid cases: 6522  
Invalid: 12181  
Minimum: 26.4  
Maximum: 44.5

First visit number of transfer (term\_of\_transfer)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 2-7

Valid cases: 618  
Invalid: 18085

FU1 ed: study child not withdrawn/dead/transferred  
(FU1\_ed\_include\_TRANSFER)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10409  
Invalid: 8294

FU1 health: study child not withdrawn/dead/transferred  
(FU1\_health\_include\_TRANSFER)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10409  
Invalid: 8294

FU2 ed: study child not withdrawn/dead/transferred  
(FU2\_ed\_include\_TRANSFER)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

FU2 health: study child not withdrawn/dead/transferred  
(FU2\_health\_include\_TRANSFER)

File: microdata\_IST\_IE\_data\_041113\_Stata12

#### Overview

FU2 health: study child not withdrawn/dead/transferred  
(FU2\_health\_include\_TRANSFER)

File: microdata\_IST\_IE\_data\_041113\_Stata12

Type: Discrete  
Format: numeric  
Width: 1  
Decimals: 0  
Range: 0-1

Valid cases: 10352  
Invalid: 8351

## Related Materials

### Questionnaires

#### School Questionnaire

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Title School Questionnaire  
 Language English  
 Description The school questionnaire is asked to headteachers at the baseline.  
 Filename Kenya malaria IE\_School\_questionnaire.pdf

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#### Parent Questionnaire for Class 1 Students

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Title Parent Questionnaire for Class 1 Students  
 Language English  
 Filename Kenya malaria IE\_Baseline\_parent\_questionnaire\_class1.pdf

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#### Parent Questionnaire for Class 5 Students

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Title Parent Questionnaire for Class 5 Students  
 Language English  
 Filename Kenya malaria IE\_Baseline\_parent\_questionnaire\_Class5.pdf

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#### Nurse Health Assessment Form

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Title Nurse Health Assessment Form  
 Country Kenya  
 Language English  
 Description This form is for recording height weight and temperature and age at baseline and follow-ups.  
 Filename Kenya malaria IE\_Nurse\_health\_assessment\_template.pdf

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#### Lab Technician Health Assessment Form

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Title Lab Technician Health Assessment Form  
 Language English  
 Description Lab technician health assessment form for recording the haemoglobin concentration and whether a blood slide was taken at baseline and follow-ups.  
 Filename Kenya malaria IE\_Lab\_technician\_health\_assessment\_template.pdf

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#### Attention Assessment Instruments

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Title Attention Assessment Instruments  
 Country Kenya  
 Language English  
 Description Tools for assessing students' attention for baseline (BL), first follow-up (FU1) and second follow-up (FU2) surveys.  
 Filename Attention assessment instruments.zip

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## Spelling Skills Assessment Instruments

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|             |  |
|-------------|--|
| Title       | Spelling Skills Assessment Instruments   |
| Country     | Kenya  |
| Language    | English  |
| Description | Tools for assessing students' spelling skills for baseline (BL), first follow-up (FU1) and second follow-up (FU2) surveys. |
| Filename    | Spelling assessment instruments.zip  |

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## Numeracy Skills Assessment Instruments

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|             |  |
|-------------|--|
| Title       | Numeracy Skills Assessment Instruments   |
| Country     | Kenya  |
| Language    | English  |
| Description | Tools for assessing students' numeracy skills for baseline (BL), first follow-up (FU1) and second follow-up (FU2) surveys. |
| Filename    | Numeracy Assessment Instruments.zip  |

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## Reports

### Cost analysis of School-Based Intermittent Screening and Treatment of Malaria in Kenya

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|              |   |
|--------------|---|
| Title        | Cost analysis of School-Based Intermittent Screening and Treatment of Malaria in Kenya  |
| Author(s)    | Thomas L Drake, George Okello, Kiambo Njagi, Katherine E Halliday, Matthew CH Jukes, Lindsay Mangham and Simon Brooker                                |
| Language     | English   |
| Publisher(s) | Drake et al. Malaria Journal 2011, 10:273 <a href="http://www.malariajournal.com/content/10/1/273">http://www.malariajournal.com/content/10/1/273</a> |
| Filename     | Drake et al 2012 (cost IST).pdf   |

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### Local Perceptions of Intermittent Screening and Treatment for Malaria in School Children on the South Coast of Kenya

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|              |  |
|--------------|--|
| Title        | Local Perceptions of Intermittent Screening and Treatment for Malaria in School Children on the South Coast of Kenya                                   |
| Author(s)    | George Okello, Sarah N Ndegwa, Katherine E Halliday, Kara Hanson, Simon J Brooker and Caroline Jones   |
| Date         | 2012-01-01   |
| Country      | Kenya  |
| Language     | English  |
| Publisher(s) | Okello et al. Malaria Journal 2012, 11:185 <a href="http://www.malariajournal.com/content/11/1/185">http://www.malariajournal.com/content/11/1/185</a> |
| Filename     | Okello et al 2012 (perceptions).pdf  |

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### Plasmodium Falciparum, Anaemia and Cognitive and Educational Performance among School Children in an Area of Moderate Malaria Transmission: Baseline Results of a Cluster Randomized Trial on the Coast of Kenya

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|           |  |
|-----------|--|
| Title     | Plasmodium Falciparum, Anaemia and Cognitive and Educational Performance among School Children in an Area of Moderate Malaria Transmission: Baseline Results of a Cluster Randomized Trial on the Coast of Kenya |
| Author(s) | Katherine E. Halliday, Peris Karanja, Elizabeth L. Turner, George Okello, Kiambo Njagi, Margaret M. Dubeck, Elizabeth Allen <sup>3</sup> , Matthew C.H. Jukes and Simon J. Brooker                               |
| Date      | 2012-01-01   |
| Country   | Kenya  |

Language English

Publisher(s) Tropical Medicine and International Health, Volume 17 no 5 pp 532-549 May 2012

Filename Halliday et al 2012.pdf

## Challenges for Consent and Community Engagement in the Conduct of Cluster Randomized Trial among School Children in Low Income Settings: Experiences from Kenya

Title Challenges for Consent and Community Engagement in the Conduct of Cluster Randomized Trial among School Children in Low Income Settings: Experiences from Kenya

Author(s) George Okello, Caroline Jones, Maureen Bonareri, Sarah N Ndegwa, Carlos Mcharo, Juddy Kengo, Kevin Kinyua, Margaret M Dubeck, Katherine E Halliday, Matthew CH Jukes, Sassy Molyneux and Simon J Brooker

Date 2013-01-01

Country Kenya

Language English

Publisher(s) Okello et al. Trials 2013, 14:142 <http://www.trialsjournal.com/content/14/1/142>

Filename Okello et al 2013 (consent).pdf

## DIME Brief, Kenya: Evaluating the Impact of Malaria on Educational Achievement

Title DIME Brief, Kenya: Evaluating the Impact of Malaria on Educational Achievement

Country Kenya

Language English

Filename DIMEBRIEF Kenya.pdf

## Research Brief, the Health and Literacy Intervention (HALI) Project

Title Research Brief, the Health and Literacy Intervention (HALI) Project

Country Kenya

Language English

Filename Final HALI brief 2013 Feb.pdf

## Impact of Intermittent Screening and Treatment for Malaria among School Children in Kenya: a Cluster Randomized Trial

Title Impact of Intermittent Screening and Treatment for Malaria among School Children in Kenya: a Cluster Randomized Trial

Author(s) Halliday, Katherine E.; Okello, George; Turner, Elizabeth L.; Njagi, Kiambo; Mcharo, Carlos; Kengo, Juddy; Allen, Elizabeth; Dubeck, Margaret M.; Jukes, Matthew C.H.; Brooker, Simon J.

Date 2014-02-01

Country Kenya

Language English

Filename [http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=469382&piPK=64165421&menuPK=64166093&entityID=000158349\\_20140227134756&cid=DEC\\_PolicyResearchEN\\_D\\_INT](http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=469382&piPK=64165421&menuPK=64166093&entityID=000158349_20140227134756&cid=DEC_PolicyResearchEN_D_INT)

## Technical documents

### Study Protocol: Improving Educational Achievement and Anaemia of School Children

Title Study Protocol: Improving Educational Achievement and Anaemia of School Children

Author(s) Simon Brooker, George Okello, Kiambu Njagi, Margaret M Dubeck, Katherine E Halliday, Hellen Inyega, Matthew CH Jukes

Date 2010-01-01

Country Kenya

Language English

Publisher(s) Brooker et al. Trials 2010, 11:93 <http://www.trialsjournal.com/content/11/1/93>

Filename Brooker et al 2010 Trials.pdf

## Data Dictionary

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Title Data Dictionary

Language English

Description For variables in the dataset, the document provides variable type, label, definition/code and description.

Filename Kenya\_malaria\_IE\_datadictionary.pdf

## List of Survey Instruments

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Title List of Survey Instruments

Language English

Filename Kenya\_malaria\_IE\_documentslist.pdf

## Informed Consent Form

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Title Informed Consent Form

Language English

Description Informed consent forms for the parents of child enrolled (2 copies signed-one for parent, one for office).

Filename Kenya\_malaria\_IE\_Informed Consent Form 2009.pdf

## Parent Information Sheet about the Study, Academic and Clinical Tests

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Title Parent Information Sheet about the Study, Academic and Clinical Tests

Language English

Description Information sheet given to every parent at the meeting prior to consenting their child into the project.

Filename Kenya\_malaria\_IE\_Information sheet 2010.pdf

## Informed Consent Standard Operating Procedure 2010

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Title Informed Consent Standard Operating Procedure 2010

Language English

Description This Standard Operating Procedure (SOP) describes the process to be followed to obtain written informed consent from subjects/guardians of children participating in the study.

Filename Kenya\_malaria\_IE\_Informed Consent SOP 2010.pdf

## Baseline Health Assessment Standard Operating Procedure 2010

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Title Baseline Health Assessment Standard Operating Procedure 2010

Language English

Description This Standard Operating Procedure (SOP) describes the process for measuring hemoglobin concentration, screening of malaria parasitaemia using rapid diagnostic tests (RDTs), as well as treatment using artemether-lumefantrine (AL).

Filename Kenya\_malaria\_IE\_Baseline Health Survey SOP 2010.pdf

## Hemoglobin Concentration Standard Operating Procedure 2010

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Title Hemoglobin Concentration Standard Operating Procedure 2010

Language English

Description This Standard Operating Procedure (SOP) describes techniques of operating HemoCue device and correctly obtaining hemoglobin readings from finger-prick blood samples.

Filename Kenya malaria IE\_Haemoglobin Concentration SOP 2010.pdf

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