EQUIP

Expanded Quality management Using Information Power for Maternal and Newborn Health in Africa

Health Information and Evaluation Design Report

Continuous Surveys in Intervention and Comparison Districts

Prepared by Tanya Marchant

October 2011
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1. Overview

The EQUIP project (Expanded Quality management Using Information Power for Maternal and Newborn Health in Africa) is a pre-post intervention study with a non-randomised comparison group (plausibility study). It included data collection at three levels (household, health facility, and district). Quantitative data at household and health facility levels was collected via continuous surveys in both intervention and comparison districts. Qualitative data from all three levels was collected separately to the continuous survey.

Quantitative data collected during the continuous surveys reflected service provision, processes, behaviours and coverage across the continuum of care from pre-pregnancy to the first 28 days of life of the newborn. The data collection has two purposes:

1. **Data to support quality management (QM)**
   Data will be summarised for each district once every 4 months during the 30 month intervention period, Nov 2011-April 2014, and also summarised for subdistricts once per year during the 30 month intervention period.

   EQUIP will produce summary reports for both intervention and comparison districts, but only implement QM in intervention districts.

2. **Data for evaluation of the quality management intervention**
   Data will be analysed for evidence of effect (on service utilization, quality and modelled maternal and new-born mortality) at the end of the project period using the ‘difference-in-differences’ approach between intervention and comparison districts.

The Health Information and Evaluation Design Report has the following objectives:

- Describe the continuous survey conceptual model
- Summarise the main indicators that will be collected at health facility and at household levels
- Describe the continuous survey team and plan of work
- Outline procedures and timelines for data collection, quality assurance, and processing
- Detail the definitions, data sources, and analytical plan for core indicators
2. Continuous survey conceptual model

2.1 EQUIP study area

EQUIP works in one intervention and one comparison district in both Tanzania and Uganda (table 1).

Table 1. EQUIP study area: district level administrative boundaries and characteristics in Tanzania and Uganda

<table>
<thead>
<tr>
<th>Administrative Boundaries in Tz and Uganda, number of units:</th>
<th>Tot Pop</th>
<th>Health facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tanzania</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region</td>
<td>District</td>
<td>Division</td>
</tr>
<tr>
<td>------------------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Mtwara</td>
<td>Tandahimba</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Newala</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>(com)</td>
<td></td>
</tr>
<tr>
<td><strong>Uganda</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region</td>
<td>District</td>
<td>County</td>
</tr>
<tr>
<td>------------------</td>
<td>----------</td>
<td>--------</td>
</tr>
<tr>
<td>Busoga</td>
<td>Mayuge</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Namaingo (com)</td>
<td>2</td>
</tr>
</tbody>
</table>

2.2 EQUIP conceptual model and data sources

An overview of the contribution that different data sources make to measuring processes and outcomes from the EQUIP intervention is presented in Figure 1 below. The continuous surveys measure whether intervention districts show evidence of ‘improved quality of health services’ and ‘increased utilization of health services’. Further, the continuous surveys contribute data for estimating newborn mortality using the Lives Saved Tool (LiST),¹ and fall within the overall plausibility analysis.

¹Where the LiST indicators are country policy; see http://www.jhsph.edu/bin/i/x/list_manual.pdf
2.3 Continuous survey conceptual model

The continuous survey includes a household cluster sample survey and a health facility census survey in both intervention and comparison districts. Data collection will continue throughout the intervention period from November 2011 for 30 months. Surveys will be organized in ‘rounds’ of data collection, each round taking one month to complete, and each round surveying 20 household clusters and up to 20 health facilities (depending on the number of facilities in the census), split equally between intervention and comparison districts. Rest periods for the survey team can be adapted to the local setting, but at the outset are proposed once every four months, which corresponds to the length of time required to complete one health facility census survey in both districts (approx 70 facilities, see table 1). By the end of the intervention period there will have been 24 rounds of data
collection, equivalent to six health facility census surveys. An illustrative timetable is shown in table 2.

Table 2. Illustrative timetable for EQUIP continuous survey team

<table>
<thead>
<tr>
<th>Facility census number</th>
<th>Survey period (4 survey rounds)</th>
<th>Rest and dissemination</th>
<th>Preparation for next survey period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 Nov11 – 28 Feb12</td>
<td>1-22 Mar12</td>
<td>23-31 Mar12</td>
</tr>
<tr>
<td>2</td>
<td>1 Apr12 – 31st July12</td>
<td>1-22 August12</td>
<td>23-31 August12</td>
</tr>
<tr>
<td>3</td>
<td>1 Sep12 – 31st Dec12</td>
<td>1-22 Feb13</td>
<td>23-28 Feb13</td>
</tr>
<tr>
<td>4</td>
<td>1Mar-30th Jun13</td>
<td>1-22 Jul13</td>
<td>23-31 Jul13</td>
</tr>
<tr>
<td>5</td>
<td>1Aug-30th Nov13</td>
<td>1-27Dec13</td>
<td>28-31 Dec13</td>
</tr>
<tr>
<td>6</td>
<td>1Jan-31st Apr 14</td>
<td>END OF SURVEY</td>
<td></td>
</tr>
</tbody>
</table>

The conceptual model for the continuous surveys is shown in Figure 2. In both intervention and comparison districts, data will be collected from households (interviewing household heads and all women aged 15-49\(^2\)), and from health facilities, using personal digital assistants (PDAs). Each day the data collected will be downloaded to a supervisor’s laptop, copied to a compact disk and sent to the project data manager who will collate all data and check for internal consistency\(^3\) (details about data processes are provided under section 5). This prospectively captured data is stored for the final evaluation of the EQUIP intervention.

In addition, the data manager will produce data summaries at the district level once every four months, and at the sub-district level once per year. In intervention areas these data summaries will be used to generate Report Cards that can be used by the QM teams at district and facilities levels (every four months) and at community level (annually) in intervention districts only. Comparison district health management teams will be given the results summaries once per year, but with no facilitation from QM teams.

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\(^2\) In Tanzania, where an estimated 5% of births occur amongst 13-14 year olds, all women aged 15-49 will be invited for interview; however this document refers to 15-49 throughout.

\(^3\) Note that in Tanzania the team are investigating the use of ‘DropBox’, a webbased repository that data is uploaded to direct from the field, and that can be remotely accessed by anyone authorised to do so.
Figure 2. Conceptual model showing processes and outputs from the EQUIP continuous household and health facility surveys in Tanzania and Uganda.
2.4 Interviewees by survey method

The household survey and facility survey modules and interviewees are summarised in table 3.

Table 3. EQUIP continuous household and facility survey modules

<table>
<thead>
<tr>
<th>Survey type</th>
<th>Respondent</th>
<th>Procedures</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household survey</td>
<td>Household head (or representative)</td>
<td>Written consent Module 1</td>
<td>Household characteristics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Household listing</td>
</tr>
<tr>
<td></td>
<td>All resident women aged 15-49</td>
<td>Written consent Module 2</td>
<td>Use of ANC if current pregnancy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Knowledge of HIV/AIDS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Knowledge and use of F/P</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pregnancy history since Jan 2010</td>
</tr>
<tr>
<td></td>
<td>Women with a live birth since Jan 2010</td>
<td>Module 3</td>
<td>Knowledge of danger signs, ANC,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>delivery, newborn care, post partum checks</td>
</tr>
<tr>
<td></td>
<td>Women with a live birth in the last 60 days</td>
<td>Module 3</td>
<td>Care of the sick newborn</td>
</tr>
<tr>
<td></td>
<td>All women aged 15-49</td>
<td>Module 4</td>
<td>Perceived quality of care</td>
</tr>
<tr>
<td>Facility census survey</td>
<td>Facility in-charge</td>
<td>Written consent Module 1</td>
<td>Facility characteristics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extraction of routine HMIS data</td>
<td>Equipment, drugs, vaccines available on day of survey</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(deliveries)</td>
<td>Facility services, staff and supervision</td>
</tr>
<tr>
<td></td>
<td>Staff members assisting last births recorded at</td>
<td>Written consent Interview and</td>
<td>Cadre, training and experience</td>
</tr>
<tr>
<td></td>
<td>the facility</td>
<td>record review</td>
<td>Behaviour for key events during</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>last deliveries</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Knowledge of key processes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>during the continuum of care</td>
</tr>
</tbody>
</table>

3. EQUIP Indicators

In the following pages EQUIP indicators for the household and the facility surveys are organized under six categories across the continuum of care for mothers and newborns (3.1 to 3.6), and under 3 cross cutting categories (3.7-3.9):

3.1 Pre-pregnancy
3.2 Antenatal
3.3 Intra-partum
3.4 Post natal care - newborn
3.5 Post natal care - mother
3.6 Newborn care seeking in the first month of life
3.7 User perceived quality
3.8 Facility readiness
3.9 Health worker practices
They are organised with reference to a theoretical model for conceptualizing health system assessment and health system user outcomes.\textsuperscript{4} EQUIP indicators collected as part of the continuous household and health facility surveys are defined as outputs (e.g. facility preparedness; supply side measures of service provision such as human resources, availability of resources, quality of services); and as outcomes (e.g. population level coverage measures that include intervention coverage such as family planning adoption, behaviour change such as care seeking, and measures of increased service responsiveness defined by service user perceived quality; and contribute data to the LiST model for predicting mortality impact. Indicators for input (e.g. policies) and processes (e.g. programmatic approaches) will be captured as part of the policy and contextual data collection (work packages 2 and 5). Indicators on cost of the intervention will be captured as part of the economic evaluation (work package 6).

Figure 2 A conceptual model for organizing the EQUIP evaluation indicators

The following pages show the core indicator at each stage along the continuum, the data source, and the expected number of interviews at that source during any round, or over one year.

\textsuperscript{4} Bryce et al, 2010. Evaluating the scale-up for maternal and child survival: a common framework. International Health, Volume 3, Issue 3 , Pages 139-146
### 3.1. Outcomes, outputs and impact: Pre-pregnancy (family planning)

<table>
<thead>
<tr>
<th></th>
<th>Household Survey</th>
<th>Facility Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ind Num</td>
<td>Source</td>
</tr>
<tr>
<td><strong>Interviews per cluster per district:</strong></td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>Interviews per round per district:</strong></td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td><strong>Interviews per year per district:</strong></td>
<td>3000</td>
<td>3000</td>
</tr>
</tbody>
</table>

#### Outcome Coverage

- **Knowledge of contraceptive methods**
  - 1a HH x
- **Contraceptive prevalence rate**
  - 1b HH x
- **Unmet need for f/p**
  - 1c HH x
- **Adolescent birth rate**
  - 1d HH x
- **Intention to use f/p**
  - 1e HH x

#### User perceived quality

- *see user perceived quality*
  - HH x

#### Facility capacity

- **Family planning commodities**
  - 8l Fac x
  - *plus see general facility readiness*
### 3.2 Outcomes, outputs and impact: Antenatal

#### Interviews per cluster per district:

- Household: 30
- Facility: 1

#### Interview per round per district:

- Household: 300
- Facility: 10

#### Interviews per year per district:

- Household: 3000
- Facility: 100

<table>
<thead>
<tr>
<th>Outcome Coverage:</th>
<th>Household</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interventions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANC coverage at least once</td>
<td>2a HH</td>
<td>x</td>
</tr>
<tr>
<td>ANC coverage at least 4 times</td>
<td>2b HH</td>
<td>x</td>
</tr>
<tr>
<td>ANC timing of first visit</td>
<td>2c HH</td>
<td>x</td>
</tr>
<tr>
<td>Content: blood pressure/urine</td>
<td>2d HH</td>
<td>x</td>
</tr>
<tr>
<td>Content: HIV counselling</td>
<td>2e HH</td>
<td>x</td>
</tr>
<tr>
<td>Content: HIV testing</td>
<td>2f HH</td>
<td>x</td>
</tr>
<tr>
<td>Content: birth preparedness</td>
<td>2g HH</td>
<td>x</td>
</tr>
<tr>
<td>Content: syphilis testing</td>
<td>2h HH</td>
<td>x</td>
</tr>
<tr>
<td>IPTp coverage (&gt;1)</td>
<td>2i HH</td>
<td>x</td>
</tr>
<tr>
<td>ITN coverage (use, all women 15-49)</td>
<td>2j HH</td>
<td>x</td>
</tr>
<tr>
<td>Successful referral</td>
<td>2k HH</td>
<td>x</td>
</tr>
<tr>
<td>TT vaccine coverage</td>
<td>2l HH</td>
<td>x</td>
</tr>
<tr>
<td><strong>Health services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>behaviours</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Facility capacity**

- Antenatal commodities | 8f | Fac | x |

*See also facility page*
### 3.3. Outcomes, outputs and impact: immediate intra-partum care

<table>
<thead>
<tr>
<th>Outcome Coverage: (interventions health services behaviours)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional delivery</td>
<td>3a</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Skilled attendant at delivery</td>
<td>3b</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Caesarian section</td>
<td>3c</td>
<td>HH</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Successful referral</td>
<td>3d</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of gloves during delivery</td>
<td>3e</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of clean delivery kits (home)</td>
<td>3f</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of soap for hand washing by delivery assistant</td>
<td>3g</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of facility stay (fac births)</td>
<td>3h</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User perceived quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical infrastructure for maternity care</td>
<td>8a</td>
<td>Fac</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-infective drugs for maternity care</td>
<td>8e</td>
<td>Fac</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Routine delivery care</td>
<td>8g</td>
<td>Fac</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum equipment for assisted delivery</td>
<td>8h</td>
<td>Fac</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full EmOC</td>
<td>8i</td>
<td>Fac</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternity services outside clinic hours</td>
<td>8n/o</td>
<td>Fac</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trained providers in clean/safe delivery</td>
<td>9b</td>
<td>Fac</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health worker practise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff report of last event</td>
<td>14</td>
<td>Fac</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Interviews per cluster per district:**
- Household: 30
- Facility: 1

**Interviews per round per district:**
- Household: 300
- Facility: 10

**Interviews per year per district:**
- Household: 3000
- Facility: 100
### 3.4 Outcomes, outputs and impact: postnatal care - newborn

#### Household

<table>
<thead>
<tr>
<th>Interviews per cluster per district:</th>
<th>30</th>
<th>30</th>
<th>3</th>
<th>1</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews per round per district:</td>
<td>300</td>
<td>300</td>
<td>30</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Interviews per year per district:</td>
<td>3000</td>
<td>3000</td>
<td>300</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Outcome Coverage: (interventions)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Code</th>
<th>Source</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-natal check (2/7 days)</td>
<td></td>
<td>4a/b</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Infants weighed at birth</td>
<td></td>
<td>4c</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Care seeking</td>
<td></td>
<td>4f</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Newborn referral</td>
<td></td>
<td>4g</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Asphyxia management</td>
<td></td>
<td>4h</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Cord cutting/care</td>
<td></td>
<td>4i/j</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Immediate/exclusive b-feeding</td>
<td></td>
<td>4k/l</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Knowledge of danger signs</td>
<td></td>
<td>4m</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Skin to skin care</td>
<td></td>
<td>4n/o</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Thermal care (drying/bathing)</td>
<td></td>
<td>4p/q</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>ITN use by newborns</td>
<td></td>
<td>4r</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Received TT vaccine at birth</td>
<td></td>
<td>4s</td>
<td>HH</td>
<td>x</td>
</tr>
<tr>
<td>Received KMC</td>
<td></td>
<td>4t</td>
<td>HH</td>
<td>x</td>
</tr>
</tbody>
</table>

#### User perceived quality

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Source</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>See &quot;user perceived quality&quot;</td>
<td>6</td>
<td>HH</td>
<td>x</td>
</tr>
</tbody>
</table>

#### Facility capacity

<table>
<thead>
<tr>
<th>Service</th>
<th>Code</th>
<th>Source</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full newborn commodities</td>
<td>8j</td>
<td>Fac</td>
<td>x</td>
</tr>
<tr>
<td>Basic care of the neonate</td>
<td>8k</td>
<td>Fac</td>
<td>x</td>
</tr>
<tr>
<td>Practise KMC in facility</td>
<td>8p</td>
<td>Fac</td>
<td>x</td>
</tr>
</tbody>
</table>

#### Staff delivering services

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Source</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trained providers in ENC/PNC</td>
<td>9a</td>
<td>Fac</td>
<td>x</td>
</tr>
</tbody>
</table>

#### Health worker practice

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Source</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff report of last event</td>
<td>14</td>
<td>Fac</td>
<td>x</td>
</tr>
</tbody>
</table>
3.5  **Outcomes, outputs and impact: postnatal care - mother**

<table>
<thead>
<tr>
<th></th>
<th>Household</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ind</td>
<td>Num</td>
</tr>
<tr>
<td>Interviews per cluster per district:</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Interviews per round per district:</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Interviews per year per district:</td>
<td>3000</td>
<td>3000</td>
</tr>
</tbody>
</table>

**Outcome Coverage:**

| (interventions | post-natal check - 2 days | 5a | HH | x |
| health services | post-natal check - 7 days | 5b | HH | x |
| Behaviours) | provider of first post-natal check | 5c | HH | x |
| User perceived quality | Intention to use F/P (post partum) | 1e | HH | x |
| | see "user perceived quality" | 6 | HH | x |

**Facility capacity**

| Trained providers: ENC/PNC | 9a | Fac | x |
| also see general facility page |
### 3.6 Outcomes, outputs and impact: care of the sick newborn

<table>
<thead>
<tr>
<th>Outcome Coverage:</th>
<th>Ind Num</th>
<th>Source</th>
<th>N Hholds</th>
<th>N women 15-49yrs</th>
<th>N preg last 12mths</th>
<th>N facility</th>
<th>N staff</th>
<th>LIST tool</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interviews per cluster per district:</strong></td>
<td>30</td>
<td>30</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interviews per round per district:</strong></td>
<td>300</td>
<td>300</td>
<td>30</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interviews per year per district:</strong></td>
<td>3000</td>
<td>3000</td>
<td>300</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ORS treatment received for diarrhea</strong></td>
<td>7a</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Newborn with infection received antibiotic</strong></td>
<td>7b</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Asphyxia management</strong></td>
<td>7c</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Care seeking</strong></td>
<td>7d</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>User perceived quality</strong></td>
<td>see user perceived quality</td>
<td>HH</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Facility capacity</strong></td>
<td>Full newborn commodities</td>
<td>8j</td>
<td>Fac</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>also see general facility page</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Staff delivering services</strong></td>
<td>Trained providers in ENC/PNC</td>
<td>9a</td>
<td>Fac</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EQUIP Health Information and Evaluation Design Report, October 2011
### Outcomes: user perceived quality

#### Interviews per cluster per district:
- Household: 30
- Facility: 3
- N women 15-49: 3
- N preg last 12mths: 1
- N facilities: 1
- N staff: 1

#### Interviews per round per district:
- Household: 300
- Facility: 30
- N women 15-49: 30
- N preg last 12mths: 10
- N facilities: 10
- N staff: 10

#### Interviews per year per district:
- Household: 3000
- Facility: 300
- N women 15-49: 300
- N preg last 12mths: 100
- N facilities: 100
- N staff: 100

<table>
<thead>
<tr>
<th>User perceived quality</th>
<th>Household</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>All women 15-49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems accessing health care for self</td>
<td>6a</td>
<td>HH</td>
</tr>
<tr>
<td>Concern no provider available</td>
<td>6b</td>
<td>HH</td>
</tr>
<tr>
<td>Women 15-49 who attended</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic during last 12 months includes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete information given about treatment</td>
<td>6e</td>
<td>HH</td>
</tr>
<tr>
<td>Facility workers talked politely</td>
<td>6f</td>
<td>HH</td>
</tr>
<tr>
<td>j/p</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility workers helpful</td>
<td>6g</td>
<td>HH</td>
</tr>
<tr>
<td>antenatal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enough time given to talk to medical staff</td>
<td>6h</td>
<td>HH</td>
</tr>
<tr>
<td>maternity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical staff listened</td>
<td>6i</td>
<td>HH</td>
</tr>
<tr>
<td>postnatal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical staff checked her properly</td>
<td>6j</td>
<td>HH</td>
</tr>
<tr>
<td>newborn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical staff ready to answer questions</td>
<td>6k</td>
<td>HH</td>
</tr>
<tr>
<td>Facility was clean</td>
<td>6l</td>
<td>HH</td>
</tr>
<tr>
<td>Facility had (clean) toilet</td>
<td>6m/n</td>
<td>HH</td>
</tr>
<tr>
<td>Drinking water was available at facility</td>
<td>6o</td>
<td>HH</td>
</tr>
<tr>
<td>Women who had a live birth in last 24 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANC card has complete information recorded</td>
<td>6p</td>
<td>HH</td>
</tr>
<tr>
<td>Knowledge of danger signed for referral</td>
<td>6q</td>
<td>HH</td>
</tr>
<tr>
<td>Exposed to breastfeeding promotion</td>
<td>6r</td>
<td>HH</td>
</tr>
</tbody>
</table>
### 3.8 Outputs: facility functioning for MNCH services

<table>
<thead>
<tr>
<th>Facility commodities</th>
<th>Household</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ind Num</td>
<td>Source</td>
</tr>
<tr>
<td><strong>Interviews per cluster per district:</strong></td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>Interviews per round per district:</strong></td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td><strong>Interviews per year per district:</strong></td>
<td>3000</td>
<td>3000</td>
</tr>
<tr>
<td><strong>Facility commodities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical infrastructure for maternity care</td>
<td>8a</td>
<td>Fac</td>
</tr>
<tr>
<td>Availability of consumable supplies</td>
<td>8b</td>
<td>Fac</td>
</tr>
<tr>
<td>Full vaccination services</td>
<td>8c</td>
<td>Fac</td>
</tr>
<tr>
<td>STD service commodities</td>
<td>8d</td>
<td>Fac</td>
</tr>
<tr>
<td>Anti-infective drugs for maternity care</td>
<td>8e</td>
<td>Fac</td>
</tr>
<tr>
<td>Full antenatal care commodities</td>
<td>8f</td>
<td>Fac</td>
</tr>
<tr>
<td>Full routine delivery care commodities</td>
<td>8g</td>
<td>Fac</td>
</tr>
<tr>
<td>Minimum equipment for assisted deliveries</td>
<td>8h</td>
<td>Fac</td>
</tr>
<tr>
<td>Full emergency obstetric services</td>
<td>8i</td>
<td>Fac</td>
</tr>
<tr>
<td>Full newborn care commodities</td>
<td>8j</td>
<td>Fac</td>
</tr>
<tr>
<td>Basic care of the neonate</td>
<td>8k</td>
<td>Fac</td>
</tr>
<tr>
<td>Family planning commodities</td>
<td>8l</td>
<td>Fac</td>
</tr>
<tr>
<td>Days services provided</td>
<td>8m</td>
<td>Fac</td>
</tr>
<tr>
<td>Services outside clinic hours: maternity</td>
<td>8n</td>
<td>Fac</td>
</tr>
<tr>
<td>Services outside clinic hours: c-sections</td>
<td>8o</td>
<td>Fac</td>
</tr>
<tr>
<td>Practice of KMC</td>
<td>8p</td>
<td>Fac</td>
</tr>
<tr>
<td>Abortion services available</td>
<td>8g</td>
<td>Fac</td>
</tr>
</tbody>
</table>
**Outputs: facility functioning for MNCH services (cont)**

<table>
<thead>
<tr>
<th>Household</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ind Num</td>
<td>Source</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>3000</td>
<td>3000</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interviews per cluster per district:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews per round per district:</td>
<td></td>
</tr>
<tr>
<td>Interviews per year per district:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Staff delivering services</th>
<th>Facility</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trained provider: ENC/PNC</td>
<td>9a</td>
<td>Fac</td>
</tr>
<tr>
<td>Trained provider: clean and safe delivery</td>
<td>9b</td>
<td>Fac</td>
</tr>
<tr>
<td>Provider trained in maternal health during last year</td>
<td>9c</td>
<td>Fac</td>
</tr>
<tr>
<td>Presence of at least one nurse/midwife</td>
<td>9d</td>
<td>Fac</td>
</tr>
<tr>
<td>Presence of at least one medical trained person</td>
<td>9e</td>
<td>Fac</td>
</tr>
<tr>
<td>Absenteeism</td>
<td>9f</td>
<td>Fac</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transport and referral</th>
<th>Facility</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorised transport used last obstetric referral</td>
<td>10a</td>
<td>Fac</td>
</tr>
<tr>
<td>Non-motorised transport used last obstetric referral</td>
<td>10b</td>
<td>Fac</td>
</tr>
<tr>
<td>Last obstetric referral accompanied by staff member</td>
<td>10c</td>
<td>Fac</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supervision and quality assurance</th>
<th>Facility</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervision by DHMT</td>
<td>11a</td>
<td>Fac</td>
</tr>
<tr>
<td>Assurance of care quality</td>
<td>11b</td>
<td>Fac</td>
</tr>
</tbody>
</table>

---

**EQUIP Health Information and Evaluation Design Report, October 2011**

Page 19
3.9 Outputs: staff behaviour – last event interview

<table>
<thead>
<tr>
<th>Interview type</th>
<th>Household</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>per cluster per district</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>per round per district</td>
<td>300</td>
<td>10</td>
</tr>
<tr>
<td>per year per district</td>
<td>3000</td>
<td>100</td>
</tr>
</tbody>
</table>

**Staff behaviour**

- all essential items for delivery prepared
- labour monitored using partograph
- active management of 3rd stage labour
- assistance received at birth of infant
- knowledge of FANC
- knowledge of birth plan
- knowledge of action in event of heavy bleeding
- knowledge of care for LBW babies

**LIST tool**

12a
12b
12c
12d
12e
12f
12g
12h
4. Continuous survey team and plan of work

Per round a total of 20 household clusters and 20 health facilities will be sampled in each country: 10 household clusters and 10 health facilities in intervention districts, and the same number in comparison districts. Each household cluster will include 30 households and will interview the household head and all resident women aged 15-49 (expected to be 1 per household on average), with extra modules for women with a live birth since January 2010 (expected to be 1 in 5 households on average). Note that the EQUIP indicators will restrict analysis to events that occurred in the last 12 months, and to care seeking for newborns less than 60 days old at survey.

4.1 Survey team composition

There is one continuous survey team in each country, each comprised of 5 interviewers, 1 mapper (sampler), and 1 supervisor, travelling in 1 car. Four interviewers will be dedicated to the household survey interviews and will be expected to complete seven or eight households per day. One interviewer will be dedicated to the facility survey interview and will be expected to complete one facility per day. The supervisor may redistribute members of the team as required. The team will have one dedicated mapper (sampler) who will work in household clusters ahead of the interview team to list and take a random sample of 30 households from each cluster. The mapper must remain in close communication with the supervisor and the survey team.

The survey team will work for 20 week days each month. Over the course of the continuous survey They will also accumulate the equivalent of 5 rest days per month that can be taken according to the needs in the local setting. At least 2 additional people who are resident in the intervention district will be trained in the full survey protocol in the event that a permanent member of the survey team is unable to work on any given day. These additional people will join the survey team at regular intervals to maintain competence.

The work and responsibilities of the mapper are to:

1. be ready to explain the purpose of the work to anyone who asks.
2. maintain good relations with the community
3. maintain and update paper maps of each selected cluster for survey
4. digitally record placement of households and facilities using GIS maintain the standard procedures for household selection in each cluster
5. clearly record all work
6. be managed by and respond to the supervisor
7. ensure the safety of the project equipment and ensure s/he has all necessary equipment each day.
8. attend all work-related meetings.
The work and responsibility of interviewers are to:

1. identify the specific households/facility to be surveyed
2. gain consent of respondents to be interviewed
3. conduct interviews in the selected households.
4. be ready to explain the purpose of the work to anyone who asks.
5. conduct interviews using the standard questionnaire
6. be managed by and communicate with the supervisor.
7. ensure the safety of the project equipment and ensure s/he has all necessary equipment each day.
8. attend all work-related meetings.
9. ensure the safety/integrity of all information collected.

The work and responsibilities of the supervisor are to:

1. lead the team.
2. be ready to explain the purpose of the work to anyone who asks.
3. coordinate and manage the field work
4. ensure the quality of the daily work activities, including conducting observed and repeat interviews and running daily summary checks on data.
5. protect the work equipment.
6. communicate with the EQUIP office.
7. ensure that all the team equipment functions satisfactorily.
8. ensure good relations with District officials and residents.
9. download and securely store household and facility data
10. complete daily summary forms and daily envelope of completed work and hand these over to the data manager

Table 4. Continuous survey team composition and capacity for household and facility interview

<table>
<thead>
<tr>
<th></th>
<th>N people</th>
<th>Working days per month</th>
<th>N interviews per day per interviewer</th>
<th>Maximum team capacity</th>
<th>Actual interviews per round</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Household interviewers</td>
<td>4</td>
<td>20</td>
<td>7-8</td>
<td>640</td>
<td>600</td>
</tr>
<tr>
<td>N Facility interviewers</td>
<td>1</td>
<td>20</td>
<td>1</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>N Mappers</td>
<td>1</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Supervisor</td>
<td>1</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total team size</td>
<td>7</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>
In addition, the continuous survey team is supported by a data manager who will maintain records in the office and who will make regular visits to the field to provide technological support. The data manager’s role is to:

- prepare all forms on the PDAs for use by interviewers, mapper and supervisor
- be available to the survey team for technological support
- accompany the mapper on 1 mapping exercise each month
- coordinate with the survey team supervisor to ensure completion and hand over of the daily summary forms and daily envelope
- maintain the database and run consistency/data quality checks to monitor completeness and quality of data transfer for each cluster
- clean the database using data correction forms on a daily basis
- summarise cluster information and compile cluster reports for key indicators that can be aggregated for the quarterly reporting

Further details of data processes are provided in section 5.

4.2 Household survey

Probability sampling methods will be used and it is essential that sampling approaches are reliably implemented at each stage. First and second stage sampling (sampling the clusters) will be carried out in 2011 for the entire period of continuous survey in order that the PDA programmers can enter cluster information to the PDA programme in advance of the survey, and in order that the survey teams can predict their work load and routes. Selection of the third stage – households within the clusters – will be carried out by the survey team mapper one or two days prior to interviewing each cluster.

Tanzanian sampling of primary and secondary stage sampling units (clusters)

A probability sample of primary sampling units (PSU – referred to here as ‘cluster’) will be drawn using sub-villages (vitongoji) for which there is known population size in Tanzania. The sample will be drawn using implicit stratification (by ordering sub-villages geographically in order that district level logistics can be managed efficiently). Then the number of households in each sub-village will be cumulated and the cluster sampling carried out with probability proportional to number of households. In the event that a sub-village is selected that has more than 150 households, standard segmentation methods will be applied. (An illustration is given in Table 4 below). In this event, 1 segment from the sub-village will be selected randomly (the second stage of sampling).

For both primary and secondary stages combined, the following five steps will be taken:

1. All possible clusters (sub-villages) will be listed geographically (for example by division from north to south)
2. The last estimate of number of households for each possible sub-village will be cumulated.
3. Sub-villages will be selected with probability proportionate to the number of households.
4. In the event that a selected sub-village has more than 150 households (the estimated number of households manageable in one day) the total number of households will be divided by 150 to determine the number of segments within the sub-village. When a sub-village has more than 1 segment it must be divided so that each segment contains roughly the same number of households. This can be done using maps if they are available, or in the field. One segment from the sub-village will then be selected at random.
5. These steps will be repeated 24 times for each district in 2011 so that a list of 24 independent samples, each of 10 clusters for each district are prepared in advance.

Table 4. Illustration of systematic pps sampling using implicit stratification with a standard segmentation design:

<table>
<thead>
<tr>
<th>Division</th>
<th>Ward</th>
<th>Sub-village</th>
<th>N households</th>
<th>Cumulative N Households</th>
<th>Selected clusters (N Segments)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>294</td>
<td>294</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>112</td>
<td>406</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>326</td>
<td>732</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>201</td>
<td>934</td>
<td>Cluster 1 (2)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>82</td>
<td>1016</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>307</td>
<td>1323</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>262</td>
<td>1586</td>
<td>Cluster 2 (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>79</td>
<td>1665</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>308</td>
<td>1973</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>236</td>
<td>2209</td>
<td>Cluster 3 (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>205</td>
<td>2414</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>113</td>
<td>2528</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>222</td>
<td>2750</td>
<td>Cluster 4 (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>326</td>
<td>3076</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>300</td>
<td>3376</td>
<td>Cluster 5 (2)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>236</td>
<td>3612</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>205</td>
<td>3817</td>
<td>Cluster 6 (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>125</td>
<td>3942</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>100</td>
<td>4042</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>71</td>
<td>4113</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>113</td>
<td>4226</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Etc.</td>
<td>Etc</td>
<td>Etc</td>
<td>Etc</td>
<td>Etc</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>1</td>
<td>102</td>
<td>8795</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>99</td>
<td>8800</td>
<td></td>
</tr>
</tbody>
</table>
Explanatory notes:

1. List the clusters (Tz: divisions, wards, sub-villages) in a defined geographical order, and the estimated number of households in each sub-village.
2. Calculate the cumulative number of households in the district.
3. Calculate the sampling interval (I) = total cumulative households/total desired clusters within the district, e.g. in this illustration 8800/10 == 880.
4. Select a random starting number between 0 and 880 (using STATA), e.g. in this illustration ==580.
5. Begin selecting clusters:
   a. First sub-village with cumulative households greater than or equal to 880 is Division 1, Ward 1, Sub-village 4. There are 2 segments in this sub-village and 1 must be selected at random.
   b. Second sub-village with cumulative households greater than or equal to the random start + I (580+880) = 1460 - is Division 1, Ward 2, EA/Kitongoji 3. There are 2 segments in this sub-village and 1 must be selected at random.
   c. Third sub-village with cumulative households greater than or equal to 1460+880 = 2040 – is Division 1, Ward 3, Sub-village 2. There are 2 segments in this sub-village and 1 must be selected at random. Continue until ten clusters have been selected.
6. Repeat this procedure 24 times for each district. (Note that it is the new random start number that allows different sub-villages to be selected each time.)

Ugandan sampling of primary and secondary stage sampling units (clusters)

In Uganda, the first stage of sampling will be defined at the Parish level (equivalent to the Ward level in Tanzania) because Parishes represent the best source of data for population size in both intervention and comparison districts at the time of the EQUIP launch.

First stage sampling of Parishes will use probability methods with implicit stratification as described above, by ordering Parishes in a defined geographical order, calculating the cumulative number of households for Parishes in each district, and selecting 10 parishes per district with probability proportional to number of households.

At the second stage of sampling, all villages within selected Parishes will be allocated a random number and the village with the lowest random number selected as the household cluster. Village size in Uganda is estimated to be approximately 150 households and so all households will be listed by the mapper with no segmentation.

---

Village population data was not available for Uganda. Mayuge, the intervention district, had enumeration area population data but Namiango, the comparison district, which was newly formed in 2011, had no EA data released by the Ugandan Bureau of Statistics at the time of the EQUIP launch (Nov 2011).
As for Tanzania, this procedure will be repeated independently 24 times in order that a list of 24 independent samples of 10 clusters for each district are prepared in advance.

**Sampling of households within clusters (third stage)**

In all districts, a household mapper will visit each cluster (or segment in the event of segmentation) in advance of the survey team to list households (or update a pre-existing household list) and systematically select 30 households from that list using a fixed fraction (number of households in list/desired number of households in cluster, i.e.30).

During sampling the mapper will do the following:

- leave an EQUIP letter of introduction with each sampled household and will inform the household head, or representative, of the planned date for interview. In the event that a household is not occupied, or that no-one is at home, there will be no replacement of households. Rather, the supervisor will visit such households on the day of survey to check availability for interview at different times of the day. Household interviewers will make a minimum of 3 attempts to locate eligible household residents for interview.

- mark the position of households on a paper map that can be used by the interviewing team to orientate themselves

- use a PDA programme to list the household numbers, household head names, and GPS coordinates of the selected households. At this point the PDA will generate a unique household id. This information will be handed to the team supervisor at the end of each day for data download.

Note that a household is defined as being occupied by at least one adult who has been resident for at least three months. Household residents are people who either live in the selected building or, e.g. in the case of polygamous families, people who live in adjacent buildings, are of the same family, and prepare and eat food together.

**Unique identification numbers**

Districts are identified using letters.

Clusters are numbered 1-240 within each district.

Households IDs are used during mapping, consent, and module 1 of household form, and are numbered 1-30 within each cluster.

Person IDs are generated by the PDA from the household listing (module 1) for linking to women’s modules 2,3, and 4.
District | Cluster | Household | Person
---|---|---|---
N | A | M | 0 | 1 | 1 | 3 | 0 | 0 | 2

Namainga, 11th cluster, 30th household, 2nd person in household
Mayuge, 240th cluster, 1st household, 4th person in household

**Interviews**

The household interviewers and survey supervisor will visit the household cluster within one or two days of the mapper. It will usually be necessary to arrive very early in the cluster, before residents leave their households in the morning. In the event that eligible residents are not at home during the day the field team will revisit the household two more times that day, until sunset. No interviewing should take place after dark.

At each selected household the household head will be asked for informed written consent to proceed with the interview, and be given an explanation about all procedures. S/he will be asked to list all household residents and their ages. From this listing, all women aged 15-49 will be identified and invited for interview. Informed written consent will be obtained from each individual interviewed.

**Quality control**

At each household cluster the supervisor will carry out the following quality control checks:

1. Observe two interviewers making at least one interview each and provide direct feedback to the interviewer about style after completion of the interview
2. For two different interviewers, repeat a sub-section of the household interview for at least two randomly selected households per cluster, and one woman aged 15-49 in each household (if at least one is resident). The repeat interview will include the household listing, and for the woman aged 15-49 questions about current pregnancy and number of live births since January 2010.
3. Physically visit each household that is not available for interview or that has refused interview
4. Download all PDA data to laptop each day and run summary reports and consistency checks on that data – ideally before leaving the cluster - making sure that time is committed to discuss these consistency checks with the interviewer team each day
5. Check all consent forms and data error forms\(^6\), and compile daily summary forms and a daily envelope\(^7\) for the data manager.

### 4.3 Facility survey

#### Facility census

A census of all health facilities in each district will be conducted every four months. In total therefore six census of facilities will be carried out (Nov11-Feb12; Apr-July 2012; Sept-Dec 2012; Mar-Jun 2013; Aug-Nov 2013; Jan-April 2014). At the time of writing, in Uganda, the intervention district had 41 facilities and the comparison district had 24. In Tanzania, the intervention district had 33 facilities and the comparison district had 37. Any new facilities opened during the intervention period will be added to the facility census list.

For each district, all health facilities will be listed and a simple random sample of ten facilities selected for survey during the same round. These ten facilities will be mapped alongside the ten household clusters and their geographical distribution considered during planning of routes/order of visit. Within each four month survey period, surveyed facilities will be removed from the sampling frame to ensure that a complete census is carried out.

For some indicators the census approach may over-represent smaller level facilities that see relatively few maternity events and facilities will be weighted during analysis to adjust for their case load (total number of births).

#### Sampling of last event interview

At each health facility the interviewer will identify the members of staff at work on the day of survey who attend deliveries. For each of these staff members, the last birth that was attended will be located in the facility ledger. Each staff member will then be interviewed about the last delivery that they attended, and data from the ledger extracted. The ‘last event’ approach to sampling for staff interview is designed to minimize any selection bias from being introduced by either facility staff or interviewer.

#### Unique identification numbers

- **Districts** are identified using letters.
- **Facilities** are numbered 1-40 (or maximum) within each district.

\(^6\) A data error form is used to record any errors on the PDA that the interviewer is aware of. These forms are sent to the data manager for data cleaning. Examples of use are that an additional resident in the household is identified after completion of the household listing section, or an interviewee realises an error in his/her responses late in the interview, or an interviewee realises that an incorrect response was recorded for a given question.

\(^7\) See SOP for Daily Envelope
Last event interviews share the same number as the facility plus require an ID for the staff member being interviewed. Census numbers reflect the number of times the facility has been visited.

<table>
<thead>
<tr>
<th>District</th>
<th>Facility number</th>
<th>Last event interview</th>
<th>Census number</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAM</td>
<td>09</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mayuge</td>
<td>40</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

Namainga, 9th facility, 1st last event interview, 1st census
Mayuge, 40th facility, 3rd last event interview, 6th census

**Interviews**

The facility interviewer and survey supervisor will visit the selected facility that is closest to the household cluster being surveyed that day. After introductions have been made the survey supervisor may return to the household cluster as required.

The facility interviewer will ask for informed written consent from the in-charge of the facility, also showing the letter of support obtained from the district health office. The PDA survey tool programming will be written to be flexible so that any section of the interview can be completed in any order, depending on availability of staff time.

During the last event interview the interviewer will need the maternity register, and the partograph that was recorded for that last event (if it is available).

**Quality control**

At each facility the supervisor will carry out the following quality control checks:

1. Meet with the in-charge at least once during the day of survey to check on permissions and progress of the interview.

2. Re-interview at least two sub-sections of the facility interview, including availability of items for maternity care and extraction of data from the facility registers.

3. Download all PDA data to laptop each day and run summary consistency checks on that data – making sure that time is committed to discuss these consistency checks with the interviewer each day, ideally before the interviewer leaves the facility.

4. Check the consent forms and data error forms, and compile with the daily envelope for the data manager.
5. Data processes

5.1. Data storage and back-up (including consent forms)

Data will be uploaded from PDAs to the supervisor’s laptop on the same day as interview (ideally before leaving the cluster). The process, known as ‘synchronising’ is done automatically by connecting each PDA in turn to the laptop using the cable provided (see SOP Uploading and backing up data).

Every day, after the PDAs have been synchronized, data will be copied onto a new CD by the survey supervisor (see SOP for daily envelop and CD burning).

5.2. Daily envelopes

For each cluster, on the same day as completing the cluster, the supervisor will prepare a daily envelope that is labeled with cluster information, and is returned to the EQUIP office at the earliest opportunity. For both household and facility interviews the envelope should contain:
- The mapper household list
- All consent forms
- All data correction forms
- Interviewer and supervisor summary sheets
- The CD storing cluster data

5.3. Summarising data in the field

The supervisor’s laptop has a summary report programme that should be run daily to check for completion of the data download. A prototype is shown below, although this may be modified. The supervisor uses this summary report as part of the quality control activity, and for immediate feedback with the team. Per cluster information is primarily to be checked for completeness. Combined information shown for each interview separately is a useful check on consistency across the team as the work progresses.

The supervisor’s laptop will also generate a report comparing original interviewer interviews with any supervisor repeat interviews. Any discrepancies between interviewer and supervisor data need to be discussed immediately as part of a supportive supervision process, and a data error form completed if necessary.
### Equip Continuous Household Survey Summary Report, September 2011

**THIS CLUSTER:** List of household numbers duplicated, or outside 1-30, and the interviewer initials.

<table>
<thead>
<tr>
<th></th>
<th>N households completed</th>
<th>N resident women 15-49</th>
<th>% women 15-49 interviewed</th>
<th>% households with at least one net</th>
<th>% currently pregnant women</th>
<th>% family planning users</th>
<th>% women with a live birth since Jan 2010</th>
<th>% women with baby 0-60 days old</th>
<th>% women with baby 0-60 days old who report any sickness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>THIS CLUSTER NUMBER</strong></td>
<td></td>
<td></td>
<td>H29!=0</td>
<td>W9!=yes</td>
<td>W32!=yes</td>
<td>All M1</td>
<td>All M117=yes</td>
<td>All M128</td>
<td>All M128</td>
</tr>
<tr>
<td><strong>ALL COMBINED</strong></td>
<td></td>
<td></td>
<td>H29!=0</td>
<td>W9!=yes</td>
<td>W32!=yes</td>
<td>All M1</td>
<td>All M117=yes</td>
<td>All M128</td>
<td>All M128</td>
</tr>
<tr>
<td><strong>ALL COMBINED BY INTERVIEWER</strong></td>
<td></td>
<td></td>
<td>H29!=0</td>
<td>W9!=yes</td>
<td>W32!=yes</td>
<td>All M1</td>
<td>All M117=yes</td>
<td>All M128</td>
<td>All M128</td>
</tr>
<tr>
<td>INT 1</td>
<td></td>
<td></td>
<td>H29!=0</td>
<td>W9!=yes</td>
<td>W32!=yes</td>
<td>All M1</td>
<td>All M117=yes</td>
<td>All M128</td>
<td>All M128</td>
</tr>
<tr>
<td>INT 2</td>
<td></td>
<td></td>
<td>H29!=0</td>
<td>W9!=yes</td>
<td>W32!=yes</td>
<td>All M1</td>
<td>All M117=yes</td>
<td>All M128</td>
<td>All M128</td>
</tr>
<tr>
<td>INT 3</td>
<td></td>
<td></td>
<td>H29!=0</td>
<td>W9!=yes</td>
<td>W32!=yes</td>
<td>All M1</td>
<td>All M117=yes</td>
<td>All M128</td>
<td>All M128</td>
</tr>
<tr>
<td>INT 4</td>
<td></td>
<td></td>
<td>H29!=0</td>
<td>W9!=yes</td>
<td>W32!=yes</td>
<td>All M1</td>
<td>All M117=yes</td>
<td>All M128</td>
<td>All M128</td>
</tr>
</tbody>
</table>

### Equip Continuous Facility Survey Summary Report, September 2011

**THIS CLUSTER:** Facility number, Facility name, Round number

<table>
<thead>
<tr>
<th></th>
<th>N facilities completed</th>
<th>% facilities partographs in stock</th>
<th>% facilities with protocol for referral</th>
<th>% facilities supervision in last 6 months</th>
<th>% of babies with LBW</th>
<th>% of normal deliveries</th>
<th>% of maternal fatalities</th>
<th>N last event</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PER ROUND</strong></td>
<td>2.37==1</td>
<td>2.115==1</td>
<td>3.87==1</td>
<td>Total 4.21</td>
<td>Total 4.2</td>
<td>Total 4.4</td>
<td>Total 4.1</td>
<td>Total last</td>
</tr>
<tr>
<td><strong>ALL COMBINED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5.4. **In the EQUIP office**

On the same day that the daily envelope is received in the office:
- The survey data must be downloaded to a secure hard drive and checked for completion.
- Data should be cleaned using any error sheets included in the daily envelope on the same day that they are received. Data error sheets should be marked as completed and filed sequentially.
- Consent forms must be checked for each household and facility respondent, and filed on the same day that they are received.
- Summary sheets for each cluster should be filed.

5.5. **Meeting with continuous survey field teams**

In addition to supervision checks carried out in the field, upon completion of each facility census period the EQUIP senior manager, the data manager, and the entire survey team must meet to review procedures and confirm plans for the next phase.
Annex 1:

Details of core indicator definitions and data source\(^8\)

\(^8\) Also stored as separate document “EQUIP Indicators by survey method_detail_17 October 11.docx”
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Household survey: Outcomes (interventions, behaviours, and perceptions)

1. **Coverage: family planning (all women 15-49)**

A. **Knowledge of contraceptive methods**: The proportion of currently married/in union or sexually active unmarried women aged 15-49 who know any contraceptive method, by specific method. [DHS, Section 5]
   - **Numerator**: Number of currently married/in union or sexually active unmarried women aged 15-49 who know any contraceptive method, by specific method.
   - **Denominator**: Number of currently married/in union women or sexually active unmarried women aged 15-49.

B. **Contraceptive prevalence rate**: The proportion of currently married/in union women aged 15-49 who are using (or whose partner is using) a (modern or traditional) contraceptive method. [MICS 5.3; Countdown]
   - **Numerator**: Number of currently married/in union women aged 15-49 who are using (or whose partner is using) a (modern or traditional) contraceptive method.
   - **Denominator**: Number of currently married/in union women aged 15-49 interviewed.

C. **Unmet need for family planning**: The proportion of currently married/in union women aged 15-49 who are fecund and want to space their births or limit the number of children they have and who are not currently using contraception. [MICS 5.4; Countdown]
   - **Numerator**: Number of currently married/in union women aged 15-49 who are fecund and want to space their births or limit the number of children they have and who are not currently using contraception.
   - **Denominator**: Number of (fecund) currently married/in union women aged 15-49 who are fecund and want to space/limit their births interviewed.

D. **Adolescent birth rate**: The number of births to adolescent women per 1,000 adolescent women.
   - [MICS 5.1 Countdown]
     - **Numerator**: Annual number of live births to adolescent women aged 15-19
     - **Denominator**: 1000 adolescent women aged 15-19 interviewed.

E. **Intention to use family planning**: The proportion of currently married/in-union women aged 15-49 who were not using contraceptives at the time of survey who reported that they intend to use family planning in the future.
   - **Numerator**: Number of currently married/in union women aged 15-49 who are not currently using family planning and who plan to use a modern method in the future
   - **Denominator**: Number of currently married/in union women aged 15-49 who are not currently using family planning interviewed.
2. Coverage: pregnant women

A. ANC coverage: attendance at least once during pregnancy: The proportion of women with a live birth in the last 24 months who were attended by skilled health personnel (doctor, nurse, midwife or auxiliary midwife) for antenatal care at least once while pregnant. [MICS 5.5a, Countdown]

Numerator: Number of women with a live birth in the last 24 months who were attended by skilled health personnel for antenatal care

Denominator: Number of women interviewed with a live birth in the last [24 months].

B. ANC coverage: attendance at least four times during pregnancy: The proportion of women with a live birth in the last 24 months who were attended by any health worker (skilled or unskilled) for antenatal care at least four times while pregnant. [MICS 5.5b, Countdown]

Numerator: Number of women with a live birth in the last 24 months who were attended by any health worker for antenatal care at least four times while pregnant

Denominator: Number of women interviewed with a live birth in the last 24 months.

C. ANC timing: Median pregnancy weeks at first visit to ANC: The median weeks of pregnancy of women at first antenatal care visit. [DHS]

D. Content of antenatal care :blood pressure/urine  The proportion of women aged 15-49 who had a live birth in the 24 months preceding survey who had their blood pressure measured and gave urine and blood samples during the last pregnancy. [MICS 5.6]

Numerator: Number of women aged 15-49 who had a live birth in the 24 months preceding survey who had their blood pressure measured and gave urine and blood samples during the last pregnancy.

Denominator: Number of women aged 15-49 with a live birth in the 24 months preceding survey.
E. **Content of antenatal care: HIV counseling** The proportion of women aged 15-49 who had a live birth in the 24 months preceding survey and who received antenatal care who report that they received counseling on HIV during antenatal care. [MICS 9.8]

Numerator: Number of women aged 15-49 who had a live birth in the 24 months preceding survey and who received antenatal care who reported that they received counseling on HIV during antenatal care.

Denominator: Number of women aged 15-49 with a live birth in the 24 months preceding survey.

F. **Content of antenatal care: HIV testing** The proportion of women aged 15-49 who had a live birth in the 24 months preceding survey and who received antenatal care who report that they were offered and accepted an HIV test and received their results. [MICS 9.9]

Numerator: Number of women aged 15-49 who had a live birth in the 24 months preceding survey and who received antenatal care who reported that they were offered and accepted an HIV test and received results.

Denominator: Number of women aged 15-49 with a live birth in the 24 months preceding survey.

G. **Content of antenatal care: birth preparedness.** The proportion of women aged 15-49 who had a live birth in the 24 months preceding survey and who received antenatal care who report that they were advised about birth preparedness during antenatal care

Numerator: Number of women aged 15-49 who had a live birth in the 24 months preceding survey and who received antenatal care who reported that they were counseled on birth preparedness.

Denominator: Number of women aged 15-49 with a live birth in the 24 months before survey

H. **Content of antenatal care: Syphilis testing.** The proportion of women aged 15-49 who had a live birth in the 24 months preceding survey and who report that they were tested for syphilis at least once during antenatal care [C34, SM]

Numerator: Number of women aged 15-49 who had a live birth in the 24 months preceding survey and who received antenatal care who reported that they were tested for syphilis at least once during antenatal care.

Denominator: Number of women aged 15-49 with a live birth in the 24 months preceding survey

I. **IPTp: coverage of at least two doses of IPTp:** The proportion of women aged 15-49 who received two or more doses of SP to prevent malaria during their last pregnancy leading to a live birth (in the 24 months preceding survey). [MICS 3.2; Countdown]

Numerator: Number of women aged 15-49 who received at least two doses of SP to prevent malaria during their last pregnancy leading to a live birth (in the 24 months preceding survey).

Denominator: Number of women aged 15-49 interviewed who had a live birth in the 24 months preceding survey.
J. **ITN coverage women 15-49**: The proportion of women aged 15-49 who slept under an insecticide-treated net (ITN) the previous night. [DHS]

**Numerator:** Number of women aged 15-49 who slept under an insecticide-treated mosquito net (ITN) the previous night

**Denominator:** Number of resident women aged 15-49 (who slept in the house the previous night)

K. **Successful referral to higher care**: The proportion of women aged 15-49 who had a live birth in the 24 months preceding survey who experienced a specific danger sign during pregnancy and who were successfully referred to higher care (successful referral defined as woman who receives referral information and who attends the referral site) [same as 3d]

**Numerator:** Number of women aged 15-49 who experienced a danger sign (heavy bleeding, labour>12hrs, loss of consciousness, premature labour, foul discharge, baby in abnormal position) in the last live birth and who were advised to seek extra care (referral) and who attended a referral site

**Denominator:** Number of women aged 15-49 who experienced a danger sign in the last live birth

L. **Tetanus toxoid vaccination**: The proportion of women aged 15-49 who had a live birth in the 24 months preceding survey who had at least two doses of tetanus toxoid vaccination

**Numerator:** Number of women aged 15-49 who received at least two doses of TT vaccine during their last pregnancy leading to a live birth (in the 24 months preceding survey).

**Denominator:** Number of women aged 15-49 interviewed who had a live birth in the 24 months preceding survey.
3. **Coverage: intra-partum period**

A. **Institutional delivery**: The proportion of women aged 15-49 with a birth in the 24 months preceding survey who delivered in a health facility. [MICS 5.8]

**Numerator**: Number of women aged 15-49 with a live birth in the 24 months preceding survey who delivered in a health facility

**Denominator**: Number of women interviewed who had a live birth in the last 24 months.

B. **Skilled attendant at delivery**: The proportion of women aged 15-49 with a live birth in the 24 months preceding survey who were attended during childbirth by a skilled health personnel. [MICS 5.7, Countdown]

**Numerator**: Number of women aged 15-49 with a live birth in the 24 months preceding survey who were attended during childbirth by a skilled health personnel (doctor, nurse, midwife, auxiliary midwife).

**Denominator**: Number of women interviewed with a live birth in the 24 months preceding interview.

C. **Caesarean section**: The proportion of live births in the 24 months preceding survey who were delivered by caesarean section. [MICS 5.9, Countdown]

**Numerator**: Number of live births to women aged 15-49 in the 24 months preceding survey who were delivered by caesarean section.

**Denominator**: Number of live births to women aged 15-49 in the 24 months preceding survey.

D. **Successful referral to higher care**: The proportion of women aged 15-49 who had a live birth in the 24 months preceding survey who experienced a specific danger sign during pregnancy (Danger signs include: heavy bleeding, labour more than 12 hours, loss of consciousness, pre-term labour, foul discharge, baby in abnormal position) and who were successfully referred to higher care (successful referral defined as woman who receives referral information and who attends the referral site) [Same as 2k]

**Numerator**: Number of women aged 15-49 who experienced a danger sign (heavy bleeding, labour>12hrs, loss of consciousness, premature labour, foul discharge, baby in abnormal position) in the last live birth and who were advised to seek extra care (referral) and who attended a referral site

**Denominator**: Number of women aged 15-49 who experienced a danger sign in the last live birth
E. Use of gloves. Proportion of women with a live birth in 24 months preceding survey who reported that the delivery assistant used gloves during delivery

**Numerator:** Number of women with a live birth in the 24 months preceding survey who reported that the delivery assistant used gloves during delivery

**Denominator:** Number of women with a live birth in the 24 months preceding survey

F. Use of clean delivery kit (home births). Proportion of women with a live birth at home in the 24 months preceding survey who used a clean delivery kit [INSIST]

**Numerator:** Number of women with a live birth at home in the 24 months preceding survey who used a clean delivery kit

**Denominator:** Number of women with a live birth at home in the 24 months preceding survey

G. Use of soap for hand washing by delivery assistant. Proportion of women with a live birth in the 24 months preceding survey who reported that the delivery assistant used soap for hand washing before and during delivery, and before cutting the cord

**Numerator:** Number of women with a live birth in the 24 months preceding survey who reported that the delivery assistant used soap for hand washing before and during delivery, and before cutting the cord

**Denominator:** Number of women with a live birth in the 24 months preceding survey

H. Length of facility stay after last delivery. Duration of stay in health facility for women delivering in a health facility (SM c.14)

**Numerator:** Number of women with a live birth in health facility who left the facility (a) on day of delivery, (b) left next day, (c) stayed more than 24 hours.

**Denominator:** Number of women with a live birth in a health facility

4. Coverage: immediate newborn care

A. Post-natal check (2 days) for babies born at home: The proportion of live births born at home during the 24 months preceding survey who had a post-natal check within 2 days of birth. [Countdown]

**Numerator:** Number of live birth babies born at home in the 24 months preceding survey who had a post-natal check within 2 days of birth.

**Denominator:** Number of live birth babies born at home in the 24 months preceding survey.
B. **Post-natal check (7 days) for babies born at home.** The proportion of live births born at home during the 24 months preceding survey who had a post-natal check within 7 days of birth.

   **Numerator:** Number of live birth infants born at home in the 24 months preceding survey who had a post-natal check within 7 days of birth.

   **Denominator:** Number of live birth babies born at home in the 24 months preceding survey.

C. **Infants weighed at birth.** The proportion of live births in the preceding 24 months who were weighed at birth [MICS 2.19]

   **Numerator:** Number of live births in the 24 months preceding survey weighing who were weighed at birth

   **Denominator:** Number of live births in the 24 months preceding survey

D. **Low birth weight.** The proportion of live births in the preceding 24 months weighing below 2,500 grams at birth [MICS 2.18]

   **Numerator:** Number of live births in the 24 months preceding survey weighing below 2,500 grams at birth

   **Denominator:** Number of live births in the 24 months preceding survey for whom birth weight is available

E. **Neonatal tetanus.** The proportion of mothers with a live birth in the year prior to the survey who received two doses of tetanus toxoid vaccine within the appropriate interval prior to the infant’s birth [MICS 3.7, Countdown]

   **Numerator:** Number of mothers with a live birth in the year prior to survey who received two doses of tetanus toxoid vaccine within the appropriate interval prior to the infant’s birth

   **Denominator:** Number of women aged 15-49 with a live birth in the year prior to survey

F. **Care seeking for newborns.** The proportion of mother with a live birth in the year prior to the survey whose newborn fell sick in the first month of life and who reported seeking care from a skilled provider for the newborn.

   **Numerator** Number of mothers with an infant less than 60 days old at interview who report the infant has ever been sick (see questionnaire for full list) and who sought care from a skilled provider

   **Denominator** Number of mothers with an infant less than 60 days old at interview who report the infant has ever been sick (see questionnaire for full list)
G. **Asphyxia management.** Proportion of women with a live birth in the last 24 months who had trouble breathing/crying after birth and who received at least one asphyxia management technique

**Numerator:** Number of women with a live birth in the 24 months preceding survey whose baby had trouble breathing/crying after birth and received at least one asphyxia management technique

**Denominator:** Number of women with a live birth in the 24 months preceding survey whose baby had trouble breathing/crying after birth

H. **Cord cutting.** Proportion of women with a live birth in the 24 months preceding survey who cord cut using a ‘clean’ razor blade

**Numerator:** Number of mothers who gave birth in 24 months preceding survey who cord cut with a clean razor blade

**Denominator:** Number of mothers who gave birth in the 24 months preceding survey.

I. **Cord care.** Proportion of mothers who gave birth in the 24 months preceding survey who put nothing on the cord

**Numerator:** Number of mothers who gave birth in 24 months prior to survey who put nothing on cord

**Denominator:** Number of mothers who gave birth in 24 months prior to survey.

J. **Immediate breastfeeding.** Proportion of women with a live birth in last 24 months who put the newborn infant to the breast within 1 hour of birth [MICS 2.5, Countdown]

**Numerator:** Number of women with a live birth in the 24 months preceding survey who put the newborn infant to the breast within 1 hour of birth

**Denominator:** Number of women with a live birth in the 24 months preceding survey

K. **Exclusive breastfeeding (3 days).** Proportion of women with a live birth in the 24 months preceding survey who exclusively breastfed her newborn during the first 3 days of life [DHS]

**Numerator:** Number of women with a live birth in the 24 months preceding survey who put the newborn infant to the breast during the first day of life and who exclusively breastfed for the first three days of life.

**Denominator:** Number of women with a live birth in the 24 months preceding survey.
L. **Knowledge of danger signs.** Proportion of women who had a live birth in the 24 months preceding survey who know at least 2 signs for seeking care immediately for their baby in the first month of life (0-28 days). [variant on IMCI]

**Numerator:** Number of women with a live birth in the 24 months preceding survey who know at least 2 of the following signs for seeking newborn care immediately: [define]

**Denominator:** Number of women with a live birth in the 24 months preceding survey

M. **Skin to skin contact(a).** Proportion of women who gave birth in the 24 months prior to survey who put the newborn skin to skin during the first day of life

**Numerator:** Number of mothers who gave birth in 24 months prior to survey who put the baby skin to skin during the first day of life

**Denominator:** Number of mothers who gave birth in 24 months prior to survey.

N. **Skin to skin contact(b).** Proportion of women who gave birth in the 24 months prior to survey who kept their newborn either on mother’s back, chest, or in mother’s arms during the first day of life

**Numerator:** Number of women who gave birth in 24 months prior to survey who kept their newborn either on own back, chest, or in arms during the first day of life

**Denominator:** Number of women who gave birth in 24 months prior to survey.

O. **Thermal care - drying babies.** Proportion of women who gave birth in the 24 months prior to survey who reported that their baby had been dried immediately after birth

**Numerator:** Number of women who gave birth in 24 months prior to survey who reported that their (last) baby had been dried immediately after birth

**Denominator:** Number of women who gave birth in 24 months prior to survey.

P. **Thermal care – delayed bath.** Proportion of women who gave birth in the 24 months prior to survey who reported that their baby was not bathed within six hours of birth

**Numerator:** Number of women who gave birth in 24 months prior to survey who reported that their (last) baby was not bathed within six hours of birth

**Denominator:** Number of women who gave birth in 24 months prior to survey.
Q. **ITN use by newborns (in malaria risk areas).** Proportion of babies 7-28 days who slept under insecticide treated net on night before survey

**Numerator:** Number of newborns (7-28 days) who slept under an insecticide treated net the previous night

**Denominator:** Number of newborns (7-28 days) surveyed who slept at home on night prior to survey.

R. **Tetanus toxoid vaccination at birth.** Proportion of women who gave birth in the 24 months prior to survey who reported that their baby received the TT vaccine at birth [LiST]

**Numerator:** See LiST definition

**Denominator:** Number of women who gave birth in 24 months prior to survey.

5. **Kangaroo mother care.** Proportion of women who gave birth in the 24 months prior to survey who reported practicing KMC with their newborn [LiST]

**Numerator:** See LiST definition

**Denominator:** Number of women who gave birth in 24 months prior to survey

5. **Coverage: post-partum**

A. **Post-natal check: Mother at 2 days:** The proportion of women who had a birth in the 24 months preceding survey who had a post-natal check within 2 days of birth. [Countdown; DHS reports this as ‘time since delivery’]

**Numerator:** Number of women with a birth in the 24 months preceding survey who had a post-natal check within 2 days of birth

**Denominator:** Number of women interviewed who had a birth in the 24 months preceding survey.

B. **Post-natal check: Mother at 7 days:** The proportion of women who had a birth in the 24 months preceding survey who had a post-natal check within 7 days of birth.

**Numerator:** Number of women with a birth in the 24 months preceding survey who had a post-natal check within 7 days of birth

**Denominator:** Number of women interviewed who had a birth in the 24 months preceding survey.
C. **Provider of first post-natal check-up**: The proportion of women who had a post-natal check up (within xx days of delivery) from a skilled provider (doctor, nurse, midwife, auxiliary nurse) (compatible with DHS section 9)

**Numerator**: Number of women with a birth in the 24 months preceding survey who had a post-natal check (within xx days of birth), disaggregated by type of provider

**Denominator**: Number of women interviewed who had a birth in the 24 months preceding survey.

6. **Delivery of health services – user perceived quality**

*Asked of all women aged 15-49.*

A. **Problems accessing health care for self**: The proportion of women age 15-49 who reported that they have at least one serious problem in accessing health care for themselves when they are sick"[DHS 9.9]

**Numerator**: Number of women aged 15-49 who report that they have at least one serious problem in accessing health care for themselves when they are sick

**Denominator**: Number of women aged 15-49 interviewed

B. **Concern no provider available**: Proportion of women age 15-49 who reported to be concerned that no provider would be available to see them when they were sick"[DHS 9.9]

**Numerator**: Number of women aged 15-49 who reported that they were concerned that no provider would be available to see them when they were sick

**Denominator**: Number of women aged 15-49 interviewed.

*Asked of all women aged 15-49 who have attended RCH facility during the last 12 months for any service across the continuum of care.*

C. **The facility had all the medicines she needed**

**Numerator**: Number of facility users interviewed who reported the facility they had visited in the last year had the medicine needed

**Denominator**: Number of women 15-49 who attended RCH during last 12 months

D. **Complete information given about any treatments**

**Numerator**: Number of facility users interviewed who reported the medical staff gave complete information about any treatments received

**Denominator**: Number of women 15-49 who attended RCH during last 12 months
E. Facility workers talked politely

Numerator: Number of facility users interviewed who reported that medical staff talked politely to them

Denominator: Number of women 15-49 who attended RCH during last 12 months

F. Facility workers helpful

Numerator: Number of facility users interviewed who reported that medical staff were helpful to them

Denominator: Number of women 15-49 who attended RCH during last 12 months

G. Given enough time to tell the medical staff everything she wanted to

Numerator: Number of facility users interviewed who reported that medical staff gave her enough time to tell them everything she wanted to

Denominator: Number of women 15-49 who attended RCH during last 12 months

H. Medical staff listened carefully to what she had to say

Numerator: Number of facility users interviewed who reported that medical staff listened carefully to what she had to say

Denominator: Number of women 15-49 who attended RCH during last 12 months

I. Medical staff were ready to answer her questions

Numerator: Number of facility users interviewed who reported that medical staff were ready to answer her questions

Denominator: Number of women 15-49 who attended RCH during last 12 months
J. Facility was adequately clean
   Numerator: Number of facility users interviewed who reported that the facility was clean
   Denominator: Number of women 15-49 who attended RCH during last 12 months

K. Facility had a toilet
   Numerator: Number of facility users interviewed who reported that the facility had a toilet
   Denominator: Number of women 15-49 who attended RCH during last 12 months

L. Facility toilets were in good condition
   Numerator: Number of facility users interviewed who reported that the facility toilets were in good condition
   Denominator: Number of women 15-49 who attended RCH during last 12 months

M. Drinking water was easily available in the facility
   Numerator: Number of facility users interviewed who reported that drinking water was easily available in the facility
   Denominator: Number of women 15-49 who attended RCH during last 12 months

As asked of all women aged 15-49 who had a live birth in the last 24 months:

N. Antenatal card has complete recorded of information (SM c.11)
   Numerator: Number of women aged 15-49 who had a live birth in the last 24 months and who produced their antenatal card who had recorded on it: gravidae, haemoglobin results, syphilis test, iron/folic supplementation, provision of malaria prophylaxis.
   Denominator: Number of women 15-49 who attended RCH during last 12 months

O. Knowledge of women aged 15-49 about warning signs which would prompt referral during delivery: [SM d.35]
   [Includes:
   Previous bad obstetric history/abdominal scars/previous stillbirth; Abnormal lie/position of fetus; Hypertension/headache/swelling/fits; Anaemia/pallor/fatigue/breathlessness; Cessation of fetal movement; Sepsis/foul smelling discharge/postpartum abdominal pain; Light bleeding/spotting; Haemorrhage/heavy bleeding; Multiple pregnancy/large abdomen; Obstructed prolonged labour]
P. Exposed to breastfeeding promotion messages in last 12 months

Numerator: see LiST definition

Denominator: Number of women 15-49 who attended RCH during last 12 months

7. Care of the sick newborn:

A. Newborn who experience an episode of diarrhea in first 28 days of life receive ORS The proportion of babies whose mothers report that they had an episode of diarrhea in the first 28 days of life and who were treated with ORS

Numerator: Number of babies aged 0-60 days whose mothers report had an episode of diarrhea in the first 28 days of life and who were treated with ORS

Denominator: Number of babies aged 0-60 days whose mothers report had an episode of diarrhea in the first 28 days of life

B. Newborns with infection who received antibiotic regimen The proportion of babies whose mothers report that they had a neonatal infection in the first 28 days of life and who were treated with antibiotics

Numerator: Number of babies aged 0-60 days whose mothers report had an infection in the first 28 days of life and who were treated with antibiotics

Denominator: Number of babies aged 0-60 days whose mothers report had an infection in the first 28 days of life

C. Newborns with trouble breathing/crying who receive asphyxia management
The proportion of babies whose mothers report that they had trouble breathing/crying at birth and who received at least one asphyxia management technique (stimulation, drying, mouth-to-mouth, resuscitation) at birth

Numerator: Number of babies aged 0-60 days whose mothers report had trouble breathing/crying at birth and who received at least one asphyxia management technique at birth

Denominator: Number of babies aged 0-60 days whose mothers report had trouble breathing/crying at birth
D. Newborns with any illness in the first 28 days of life and were taken to formal medical care provider outside the home. The proportion of babies who were reported to have any illness during the first 28 days of life who were taken for formal medical care outside the home

Numerator: Number of babies aged 0-60 days whose mothers report had any illness in the first 28 days of life and who were taken for formal medical care outside the home

Denominator: Number of babies aged 0-60 days whose mothers report had any illness in the first 28 days of life

Facility survey: Outputs

8. Delivery of health services – facility commodities

A. Physical infrastructure for maternity care. The proportion of health facilities that have appropriate physical infrastructure to delivery maternity care on the day of survey. [SM d.34]

Numerator: Number of health facilities that have appropriate physical infrastructure for maternity care (examination room, table and stool for gynaecological exam, storage area for drugs and other supplies, toilet facilities, delivery room/labour room with bed and lighting, refrigerator, water supply, ambulance or vehicle for referral) available on the day of survey

Denominator: Number of health facilities surveyed

B. Availability of consumable supplies (all facilities). The proportion of health facilities that have consumable supplies in stock on the day of survey. [SM d.25]

Numerator: Number of health facilities that have consumable supplies (gloves, disposable syringes and needles, IV kit, blank partographs, blank antenatal client cards, cord ties, blood giving sets, syphilis test kits, urine dip sticks/protein analysis test) available on the day of survey

Denominator: Number of health facilities surveyed

C. Full vaccination services. The proportion of health facilities that have the equipment and supplies to provide full vaccination services on the day of survey. [IMCI#16]

Numerator: Number of health facilities that have the equipment and supplies to support full vaccination services (functioning refrigerator or cold chain, and functioning sterilizer and needles/syringes or disposable needles/syringes) available on the day of survey

Denominator: Number of health facilities surveyed
D. **STD service commodities.** The proportion of health facilities that have the commodities to provide STD services on the day of survey. [SM c.34]

**Numerator:** Number of health facilities that have the equipment and supplies for provide STD services (STD treatment/antibiotics, syphilis test kits, educational materials on STDs and HIV/AIDS) available on the day of survey

**Denominator:** Number of health facilities surveyed

E. **Anti-infective drugs for maternity care.** The proportion of health facilities that have anti-infective drugs for maternity care on the day of survey. [SM d.28]

**Numerator:** Number of health facilities that have the anti-infective drugs for maternity care available on the day of survey.

*For mother:* ampicillin (capsules or injection), Ampicillin (capsules or injection), Benzathine benzylpenicillin (injection) or benzylpenicillin (injectin) or procaine benzylpenicillin (injection), Ceftriaxone (injection) or ciprofloxacin (tablet), Gentamicin (injection) or kanamycin (injection), Sulfamethoxazole + trimethoprim (tabs)]

*For newborn:* Tetracycline ointment or silver nitrate eye drops

**Denominator:** Number of health facilities surveyed

F. **Full antenatal care commodities.** The proportion of health facilities that have the equipment and supplies to provide full antenatal care services on the day of survey.

**Numerator:** Number of health facilities that have the equipment and supplies to support full [antenatal care] services (develop list) available on the day of survey

**Denominator:** Number of health facilities surveyed

G. **Full routine delivery care commodities.** The proportion of health facilities that have the equipment and supplies to provide full routine delivery care services on the day of survey

**Numerator:** Number of health facilities that have the equipment and supplies to support full routine delivery care services (blood pressure apparatus, stethoscope, infant weighing scale, fetal stethoscope, sterilizer, clinical oral thermometer, manual vacuum aspirator, protective clothing, clinical management guidelines or flow charts for maternal care, speculum, vacuum extractor, obstetric forceps (SM d.21) available on the day of survey

**Denominator:** Number of health facilities surveyed
H. **Minimum equipment for assisted delivery (all facilities).** The proportion of health facilities that have the minimum equipment for assisted delivery (all facilities) [SM d.22].

**Numerator:** Number of health facilities that have scissors, suture needles and suture material, and needle holder available on day of survey

**Denominator:** Number of health facilities surveyed

I. **Full emergency obstetric services.** The proportion of health facilities that have the equipment and supplies to provide full [emergency obstetric care] services on the day of survey. [see DHS/SPA list of commodities]

**Numerator:** Number of health facilities that have the equipment and supplies to support full emergency obstetric care services (develop list) available on the day of survey

**Denominator:** Number of health facilities surveyed

J. **Full newborn care commodities.** The proportion of health facilities that have the commodities to provide newborn care on the day of survey. [DHS/SPA, INSIST-type]

**Numerator:** Number of health facilities that have the commodities to provide newborn care on the day of survey (define list – see below)

**Denominator:** Number of health facilities surveyed

[INSIST list for **Health facilities** includes:

Soap; Weighing scale; Thermometer; Tetracycline eye ointment; Oral antibiotic (cotrimoxazole or amoxicillin); Gentamycin (IM/IV); Penicillin or ampicillin (IM/IV); Mucus trap/suction machine, Self inflating bag, Face masks (sizes 0,1,2), Syringes (1mp, 2mp, 5mp, 10mo), Needles (23-25 gauge), Nasogastric tubes/20ml syringes, Vitamin K 1mg injection, Gentian violet paint, Nevirapine, ORS, Dextrose saline/10% dextrose.]

[INSIST list for **Referral hospital** includes:

All above, plus: IV cannulae, IV fluid set, Tape, Radiant warmer, Oxygen supply, Nasal prongs/masgastric tubes, Electric suction machine, Blood sugar testing sticks, Fluorescent tubes for phototherapy, Pulse oximeter, Apnoea monitor, Icterometer/bilirubin assessment, Laryngoscope, Phenobarbital injection, Diazepam for rectal use, Antitetanus immunoglobulin, Cefotaxime injection, Cloxacillin injection, Ceftrioxone injection, Safe blood transfusion]

[DHS/SPA list for **Health facilities** includes:

**EQUIPMENT:** Bag and mask, Incubator, Other source of heat for premature infant, Infant scale, Suction bulb for mucus extraction, Suction apparatus for use with catheter, Resuscitation table for baby with heat source, Disposable cord ties or clamps, Towel to wipe baby, Blanket to wrap baby, Vitamin K (inj); **GUIDELINES:** Essential mat/ neonatal clinical care guidelines, Other guidelines for normal delivery, Guidelines for EOC]

K. **Care of the neonate (all facilities).** The proportion of health facilities that have the commodities to provide newborn care on the day of survey. [SM d.23]

**Numerator:** Number of health facilities that have the equipment and supplies for care of the neonate (cloth or towel to dry baby, blanket to wrap baby, bag and mask for neonatal resuscitation) available on the day of survey

**Denominator:** Number of health facilities surveyed
L. **Family planning commodities.** The proportion of health facilities that have the commodities to provide family planning services on the day of survey.

**Numerator:** Number of health facilities that have the equipment and supplies for provide family planning services (see list of FP commodities in survey instrument) available on the day of survey

**Denominator:** Number of health facilities surveyed

5.6.  

M. **Days services provided.** The number of days per week that the clinic is open and providing full MNCH services

N. **Services outside clinic hours: maternity.** The proportion of facilities providing maternity services outside usual clinic hours (24/7) [INSIST and SM c.18]

**Numerator:** Number of health facilities providing maternity services 24 hours per day, seven days per week

**Denominator:** Number of health care facilities providing maternity services

O. **Services outside clinic hours: c-sections.** The proportion of facilities providing caesarean sections outside usual clinic hours [INSIST]

**Numerator:** Number of health facilities providing caesarean sections 24 hours per day, seven days per week

**Denominator:** Number of health care facilities providing caesarean sections

P. **Kangaroo mother care:** The proportion of facilities providing kangaroo mother care services

**Numerator:** Number of health facilities providing kangaroo mother care

**Denominator:** Number of health facilities surveyed
9. Delivery of health services - facility staff

A. Trained providers: Essential Newborn Care/Post Natal Care. The proportion of health care workers in facilities providing ENC/PNC who are trained in ENC/PNC [INSIST]

Numerator: Number of health care workers trained in ENC/PNC

Denominator: Number of health care workers providing ENC/PNC in facility

B. Trained providers: Clean and safe delivery. The proportion of health care workers in facilities providing IMNCH services who are trained in clean and safe delivery [INSIST]

Numerator: Number of health care workers trained in clean and safe delivery

Denominator: Number of health care workers providing IMNCH services in facility

C. Providers trained in last year: Maternal health. The proportion of health care workers in facilities providing maternal health services who received training in either safe motherhood, family planning, PMTCT, or breastfeeding in the last 12 months [INSIST]

Numerator: Number of health care workers trained in either safe motherhood, family planning, PMTCT, or breastfeeding in the last 12 months

Denominator: Number of health care workers providing maternity services in facility

D. Presence of at least one nurse/midwife. The proportion of health facilities with at least one nurse/midwife present at work on the day of survey

Numerator: Number of facilities with at least one nurse/midwife present at work on day of survey

Denominator: Number of health facilities

E. Presence of at least one medical trained personnel. The proportion of health facilities with at least one medically trained personnel present at work on the day of survey

Numerator: Number of facilities with at least one medically trained personnel at work on day of survey

Denominator: Number of health facilities

F. Absenteeism. The proportion of health care workers employed in facilities (providing ANC/obstetric/post-partum/newborn health services) who are absent on the day of survey

Numerator: Number of health care workers employed in facilities (providing ANC/obstetric/post-partum/newborn health services) who are absent on the day of survey

Denominator: Number of health care workers employed in facilities
10. Delivery of health services – referral and transport

A. **Transport for obstetric referral: motorised.** The proportion of facilities that used a motorized vehicle last time an obstetric referral was made [INSIST compatible]

**Numerator:** Number of facilities that have made an obstetric referral and used a motorised vehicle last time a referral was made (in xx time period)

**Denominator:** Number of facilities that have made a referral (in xx time period)

B. **Transport for obstetric referral: non-motorised.** The proportion of facilities that used a non-motorized vehicle last time an obstetric referral was made [INSIST compatible]

**Numerator:** Number of facilities that have made an obstetric referral and used a non-motorised vehicle the last time a referral was made (in xx time)

**Denominator:** Number of health facilities that have made a referral (in xx time)

C. **Accompanied referral.** The proportion of facilities where obstetric referral was accompanied by a staff member [INSIST]

**Numerator:** Number of health facilities that have made an obstetric referral and the last referral was accompanied by a health personnel (in xx time period)

**Denominator:** Number of health care facilities that have made a referral (in xx time)

**Note:** possible additional indicator on referral taken from Murray (2001)

- Record of APGAR scores (extract from routine records monthly): APGAR<7 indicative of birth asphyxia and thus potentially a missed opportunity for referral

11. Delivery of health services – supervision by DHMT

A. **Supervision.** The proportion of health facilities that received at least one visit of routine supervision that during the previous six months.

**Numerator:** Number of health facilities that received at least one visit of routine supervision (*excluding visits to health workers for the EQUIP project*) during the previous six months

**Denominator:** Number of health facilities surveyed
8. **Assurance of care quality.** The proportion of facilities with a formal quality assurance system

   Numerator: Number of health facilities with a formal QA system in place

   Denominator: Number of health facilities surveyed

12. **Delivery of health services – health worker practice - Last event interview**

A. **Staff member was able to prepare all essential items for the last delivery event**

   Numerator: Interviewed facility staff who attended the last delivery who reported having been able to prepare gloves, disinfectant, gauze, clean cloth for drying baby, razor blade, cord ligatures, oxytocine, ergometrine, eye ointment

   Denominator: Number of last event staff interviewed

B. **Staff member monitored labour using a partograph**

   Numerator: Interviewed facility staff who attended last delivery who reported monitoring the labour on a partograph

   Denominator: Number of last event staff interviewed

C. **Staff member practices active management of the third stage of labour**

   Numerator: Interviewed facility staff who reported practicing active management of the third stage of labour (including immediate oxytocin, immediate ergometrine, controlled cord traction, uterine massage)

   Denominator: Number of last event staff interviewed

D. **Staff member has assistance during delivery**

   Numerator: Interviewed facility staff who reported having another staff member present when the baby was born who could assist in caring for the mother or the newborn

   Denominator: Number of last event staff interviewed
E. Staff member has knowledge of focused antenatal care
   Numerator: Interviewed facility staff who name at least 4 of 6 components of FANC
   Denominator: Number of last event staff interviewed

F. Staff member has knowledge of which pregnant women required a special birth plan
   Numerator: Interviewed facility staff who name at least 4 of 8 high risk (antenatal) characteristics (see survey tool)
   Denominator: Number of last event staff interviewed

G. Staff member has knowledge of appropriate action to take in event of heavy bleeding after delivery
   Numerator: Interviewed facility staff who name at least 4 of 8 activities (see survey tool) to take if a woman develops heavy bleeding after delivery
   Denominator: Number of last event staff interviewed

H. Staff member has knowledge of appropriate care for the low birth weight baby
   Numerator: Interviewed facility staff who name at least 3 of 5 appropriate care actions for the low birth weight baby
   Denominator: Number of last event staff interviewed

13. Health Management Information System Data Extraction

A. Proportion of all deliveries that were unassisted during the last 4 months
   Numerator: Number of unassisted deliveries recorded in the maternity ledger in the 4 months preceding survey
   Denominator: Total number of deliveries recorded in the maternity ledger in the 4 months preceding survey

B. Proportion of all deliveries that were caesarean sections during the last 4 months
   Numerator: Number of caesarian sections recorded in the maternity ledger in the 4 months preceding survey
   Denominator: Total number of deliveries recorded in the maternity ledger in the 4 months preceding survey
C. Proportion of all deliveries that ended in a live birth during the last 4 months

**Numerator:** Number of live births recorded in the maternity ledger in the 4 months preceding survey

**Denominator:** Total number of deliveries recorded in the maternity ledger in the 4 months preceding survey

D. Proportion of low birth weight infants during the last 4 months

**Numerator:** Number of live births recorded in the maternity ledger in the 4 months preceding survey with a birth weight < 2500 grammes

**Denominator:** Total number of deliveries recorded in the maternity ledger in the 4 months preceding survey