**Data analysis plan**

## Background

MSF-OCA has operated in Jonglei State, South Sudan for over 25 years. The area is a complex environment with frequent outbreaks/epidemics of diseases, accessibility and communication barriers, and ongoing conflict. Since establishment, the type of public health services and number of health facilities have evolved according to need (Appendix 1).

MSF-OCA provides medical care at Lankien Hospital, Pieri PHCC and five decentralised satellite CBMC sites in Nyirol and Uror Counties (Map 1). In 2019, health services were provided at two additional sites, Modit and Pathai. Both sites commenced as PHCU’s in 2019, before transitioning to the CBMC model. The CBMC model is based on the WHO Integrated Community Case Management (ICCM) strategy that complements the reach of public health services. Treatment of malaria, pneumonia and diarrhoea is provided to populations with limited access to facility-based health care, with a focus on children less than 5 years.

In 2019, a review of the Jonglei CBMC sites and malaria points was conducted. Health services should be continuously monitored and evaluated to ensure they continue to meet the population needs. This includes understanding trends in key morbidities and treatments provided. This secondary data analysis serves as an extension of the analysis. The purpose is to explore trends in select morbidities from Jonglei project health facilities, with a specific focus on the operational ICCM/CBMC sites.

## Methodology

|  |  |
| --- | --- |
| Study type | Secondary data analysis |
| Data sets used | Data will be sourced from the HIS system for 2019. |
| Analysis package | Microsoft Excel and Stata |
| Exposure variable | Locality, age, morbidity |
| Outcome variables | Consultations |

Different data variables and extraction processes exist per health facility. Lankien Hospital, Pieri PHCC and former PHCU sites record data under OPD. ICCM sites record data under CBMC/ICCM. This means for two health services, data is extracted differently based on their classification.

## Proposed analytical strategy

1. Extract multiple data from HIS 2019 to present data. Remove first few lines. Format headings to suit Stata and transition into R software package.
2. Append datasets.
3. Merge data from:
   1. Modit ICCM and Modit PHCU (week 1-9)
   2. PathaiICCM" and Pathai PHCU (week 1-9)
4. Check missing weeks.
5. Clean data variables (trim)
6. Generate new variables (year, month, age group).
7. Identify/select data variables (see below)

|  |  |  |
| --- | --- | --- |
|  | Variables | |
| Morbidity | OPD | CBMC/ICCM |
| All consultations | All OPD consultations\* | ICCM consultations\*\* |
| Malaria | Malaria | ICCM Diagnosis Uncomplicated malaria  ICCM Diagnosis Malaria with SAM  ICCM Diagnosis Malaria with diarrhoea  ICCM Diagnosis Malaria with pneumonia  ICCM Diagnosis Suspected severe malaria |
| Acute watery diarrhoea | Diarrhoea, acute watery | ICCM Diagnosis Malaria with diarrhoea  ICCM Diagnosis Uncomplicated diarrhoea  ICCM acute watery diarrhoea |
| Malnutrition | MUAC screening: SAM | ICCM MUAC SAM  ICCM bilateral oedema  Severe acute malnutrition |
| Number of antibiotic treatments | TBD | No. of antibiotic treatment |

\* Data>Data elements>OPD – New consultations (all)

\*\* Data>Data elements>ICCM/CBM

## Analysis

* Descriptive analysis overall trends and by month
* Create figures to display data
* Tables raw data included in the Appendix

## Figures

Figure 1. Number of total consultations, by health facility and month, 2019

### Malaria

Figure 2. Number of malaria consultations, by diagnoses and ICCM site, 2019

Figure 3a. Number of malaria consultations in Nyambor, by age group and month, 2019

Figure 3b. Number of malaria consultations in Nyatim, by age group and month, 2019

Figure 3c. Number of malaria consultations in Riang, by age group and month, 2019

Figure 3d. Number of malaria consultations in Yuai, by age group and month, 2019

Figure 3e. Number of malaria consultations in Pathai, by age group and month, 2019

### Acute watery diarrhoea

Figure 4. Number of acute watery diarrhoea consultations, by diagnoses and ICCM site, 2019

Figure 4a. Number of acute watery diarrhoea consultations in Nyambor, by age group and month, 2019

Figure 4b. Number of acute watery diarrhoea consultations in Nyatim, by age group and month, 2019

Figure 4c. Number of acute watery diarrhoea consultations in Riang, by age group and month, 2019

Figure 4d. Number of acute watery diarrhoea consultations in Yuai, by age group and month, 2019

Figure 4e. Number of acute watery diarrhoea consultations in Pathai, by age group and month, 2019

### Pneumonia

Figure 5. Number of respiratory tract infections consultations, by diagnoses and ICCM site, 2019

Figure 6a. Number of respiratory tract infections consultations in Nyambor, by age group and month, 2019

Figure 6b. Number of respiratory tract infections consultations in Nyatim, by age group and month, 2019

Figure 6c. Number of respiratory tract infections consultations in Riang, by age group and month, 2019

Figure 6d. Number of respiratory tract infections consultations in Yuai, by age group and month, 2019

Figure 6e. Number of respiratory tract infections consultations in Pathai, by age group and month, 2019

### Malnutrition

Figure 7. Number of SAM consultations, by ICCM site, 2019

Figure 8a. Number of SAM consultations in Nyambor, by age group and month, 2019

Figure 8b. Number of SAM consultations in Nyatim, by age group and month, 2019

Figure 8c. Number of SAM consultations in Riang, by age group and month, 2019

Figure 8d. Number of SAM consultations in Yuai, by age group and month, 2019

Figure 8e. Number of SAM consultations in Pathai, by age group and month, 2019

### Antibiotic use

Figure 9. Number treated with antibiotics, by month, 2019

## Data errors/limitations

* OPD include new consultations – not follow up consultations
* In March 2019, Modit and Pathai shifted from PHCU to ICCM sites. ICCM data and PHCU data has been included
* Data entry errors due to uncertainty regarding some areas in the HIS form i.e. Severe acute malnutrition (under Diagnoses) versus MUAC SAM (Malnutrition).
* Missing reporting weeks. Nyantim – missing some data 2019 week 1 to 5, including total consultations.
* Total consultations does not equal the sum of diagnoses.