**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 four decentralised satellite CBMC sites in Nyirol and Uror Counties (Nyatim, Nyambor, Riang and Yuai). In 2019, health services were provided at two additional sites, Modit and Pathai. Both sites commenced as primary health care centres ’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. The CBMC model does not only treat the <5 years population for those three diseases but treats all community members irrespective of age for those three diseases.

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. As part of that review, some CBMC sites were handed over and Modit and Wuniker are no longer CBMC sites in 2020.

Routine analysis of CBMC data will be done to closely monitor the morbidities affecting the populations (and their trends) and also to monitor the quality of the data being collected. This analysis is now automated and can be available as needed.

## Methodology

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| --- | --- |
| Study type | Secondary data analysis |
| Data sets used | Data will be sourced from the HIS system for 2019-2020 |
| Analysis software | R |
| Exposure variable | Locality, age, morbidity |
| Outcome variables | Consultations |

## Proposed analytical strategy

1. Extract data per CBMC site from HIS 2019-2020 and import into R
2. Create any new variables as needed e.g. year, location
3. Combine the various datasets together from each CBMC site to be able to compare numbers across the locations
4. Identify/select data variables (see below)

|  |  |
| --- | --- |
| **Category** | **Variable** |
| All consultations | ICCM consultations\* |
| Malaria | ICCM RDT performed\*  ICCM RDT positive: falciparum\*  CCM Total malaria diagnoses\* |
| Acute watery diarrhoea | ICCM acute watery diarrhoea\* |
| Malnutrition | ICCM MUAC MAM\*  ICCM MUAC no AM\*  ICCM MUAC SAM\*  ICCM bilateral oedema \*  ICCM Diagnosis SAM |
| Pneumonia | ICCM Diagnosis Uncomplicated pneumonia  ICCM diagnosis cough\_cold |

\*Data>Data elements>ICCM/CBM

## Analysis

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

## Figures

Figure 1. Number of total monthly consultations by age group, CBMC site, 2019-2020

### Malaria

Figure 2. Total number of monthly malaria RDT positive by age group, CBMC site, 2019-2020

Figure 3. Monthly malaria positivity, CBMC site, 2019-2020

Figure 4: Proportional morbidity due to malaria, CBMC site, 2019-2020

Figure 5. Number of monthly discrepancies between RDT positive malaria cases and malaria diagnoses by CBMC site, 2019-2020

### Acute watery diarrhoea

Figure 6. Total number of acute watery diarrhoea consultations by age group and week, CBMC site, 2019-2020

Figure 7. Proportion morbidity acute watery diarrhoea consultations by age group, CBMC site, 2019-2020

### Pneumonia

Figure 8. Total number of RTI diagnoses (uncomplicated pneumonia and cough/cold) by age-group, CBMC site, 2019-2020

Figure 9. Proportional morbidity of RTIs, CBMC site, 2019-2020

### Malnutrition

Figure 10. Total number of MUAC SAM or bilateral oedema among 6-59m by CBMC site, 2019-2020

Figure 11. Proportion of SAM (MUAC or bilateral oedema) among 6-59m by CBMC site, 2019-2020

Figure 12. Proportion of <5 years consultations who received a MUAC assessment, CBMC site, 2019-2020

Figure 13. Number of discrepancies between SAM diagnoses and combination of MUAC SAM and oedema, CBMC site, 2019-2020

Malaria all

|  |
| --- |
| ICCM consultations |
| ICCM RDT performed |
| ICCM RDT positive: falciparum |
| ICCM RDT positive: falciparum and/or mixed |
| ICCM RDT positive: non falciparum |
| CCM malaria RDT positive % |
| ICCM Diagnosis Uncomplicated malaria |
| ICCM Diagnosis Suspected severe malaria |
| ICCM Diagnosis Malaria with SAM |
| ICCM Diagnosis Malaria with diarrhoea |
| ICCM Diagnosis Malaria with pneumonia |
| CCM Total malaria diagnoses |
| ICCM patients repeat treated past 28d |
| ICCM RDT pos. treated past 28d |
| CCM Proportion RDT pos. treated ACT past 28d (%) |
| ICCM pre-referral artesunate |
| CCM severe malaria <5y pre-referral artesunate (%) |
| ICCM treated ACT 1st line |
| CCM Proportion malaria treated with ACTs (%) |
| CCM Proportion malaria treated ACT 1st line (%) |

Malaria & Referral

|  |
| --- |
| ICCM RDT positive: falciparum and/or mixed |
| ICCM No. with danger signs |
| ICCM Diagnosis Suspected severe malaria |
| ICCM pre-referral artesunate |
| CCM severe malaria <5y pre-referral artesunate (%) |
| ICCM No. referred |

Malaria by Age

|  |  |  |  |
| --- | --- | --- | --- |
| 2-5m | 6-59m | 5-14y | >=15y |

Diarrhoea

|  |
| --- |
| Data / ICCM ages |
| ICCM Diagnosis Malaria with diarrhoea |
| ICCM acute watery diarrhoea |
| ICCM bloody diarrhoea |
| ICCM Diagnosis Uncomplicated diarrhoea |
| ICCM treated ORS/Albendazole/Zn |

Pneumonia

|  |
| --- |
| ICCM consultations |
| ICCM Diagnosis Cough/Cold |
| ICCM Diagnosis Malaria with pneumonia |
| ICCM Diagnosis Uncomplicated pneumonia |
| ICCM treated antibiotics |

Pneumonia by age

|  |  |  |  |
| --- | --- | --- | --- |
| 2-5m | 6-59m | 5-14y | >=15y |

Nutrition

|  |
| --- |
| ICCM Diagnosis Malaria with SAM |
| ICCM bilateral oedema |
| ICCM Diagnosis SAM |
| ICCM MUAC MAM |
| ICCM MUAC SAM |
| ICCM MUAC no AM |