

Decentralised models of care in
Médecins Sans Frontières (MSF)
OCBA missions: Case study evaluation
for Malakal project, South Sudan



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One of the boats used to refer patients during the rainy season, Malakal, South Sudan

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Abstract

Introduction

This case study examines decentralised models of care (DMC) introduced in MSF OCBA's Malakal project in South Sudan in 2017, in response to healthcare barriers in the region. By January 2020, DMC components in the project consisted of six community health workers and covered the three main killers in the project area (malaria, pneumonia, diarrhoea), nutrition for children aged under five, kala azar, and a referral system from communities to higher levels of care.

The evaluation analysed the impact of DMC on access to healthcare and health outcomes for the target population, the level of community acceptance, the relevance and appropriateness of the DMC approach, and the enablers and barriers in its implementation.

Methods of data collection included a document review, site visits, and interviews and focus group discussions with MSF staff, communities, and other stakeholders. Medical data was analysed retrospectively.

Findings/conclusions

Relevance: the Malakal DMC project was timely and relevant according to the population needs and contextual factors (conflict and access), but the programme design was compromised by the small scale of the assessed communities.

Appropriateness: the implementation strategy was only partially appropriate. Although it employed decentralised approaches, which were complemented with a referral system to ensure continuum of care for excluded communities, the scale of the intervention remained limited and its adaptation over time was inadequate. The approach underestimated the human resources needs and failed to increase the coverage and services despite repeated proposals elaborated in the field.

Effectiveness: DMC coverage in the project area is generally low and it was not possible to assess its potential impact on health outcomes with the available data. Considering the limited scale of intervention, however, tangible impact is unlikely. Communities expressed appreciation for MSF's commitment to bring medical care closer to communities, but they also identified many relevant uncovered needs.

Enablers included: minimal insecurity, presence of health facilities for continuum of care, and availability of means of transportation within the project area. **Challenges included:** scepticism towards DMC among MSF decision makers; constraints in available financial and human resources; gaps in medical supplies at community sites.

KEYWORDS: access to healthcare, decentralised models of care, community case management, community health workers, community strategy, community participation, health seeking behaviour

Abbreviations

ANC	Antenatal care
ATB	Antibiotic
ARTI	Acute respiratory tract infection
ARV	Antiretroviral medications
ATFC	Ambulatory therapeutic feeding centre
BHI	Boma Health Initiative
BHW	Boma health worker
BPHS	Basic Package of Health Services
CASS	Coordinated Assessment Support Section
CBA	Community based activities
CHW	Community health worker
DPT3	Combined vaccine: diphtheria, pertussis (whooping cough) and tetanus
CMR	Crude mortality rate
DI	Decentralised interventions
DMC	Decentralised models of care
DTP	Diphtheria, tetanus, polio
IMC	International Medical Corps
IO	Opposition armed forces
FGD	Focus group discussion
HF	Health facility
HMIS	Health management information system
HP	Health post
HRH	Human Resourced for Health
iCCM	integrated community case management
ICRC	International Committee of the Red Cross
ICU	Intensive care unit
IDP	Internally displaced people
IPD	Inpatient department
ITFC	Inpatient therapeutic feeding centre
GAC	Geographical access coverage
KA	Kala azar
MC	Mobile clinic
MDTF	Multi-Donor Trust Fund for Integrating Externally Financed Health Programme, WB
MOH	Ministry of Health
MRH	Maternal and reproductive health
MSF	Médecins Sans Frontières
MUAC	Mid upper arm circumference
NGO	non-governmental organisation
OCBA	MSF Operational Centre Barcelona
OCHA	UN Office for the Coordination of Humanitarian Affairs
OPD	Outpatient department
PNC	Postnatal care
POA	Plan of action
POC	Protection of Civilians
PHCC	Primary healthcare clinic
PHCU	Primary healthcare unit
SO	Specific objective
SPLA/M	Sudan's People Liberation Army/Movement

SPLA-iO	Sudan's People Liberation Army in Opposition
TBA	Traditional birth attendant
TOR	Terms of reference
U5M	Under five mortality rate
UNICEF	United Nations Children Fund
WB	World Bank
WV	World Vision

Table of contents

1	Executive summary	1
2	Introduction.....	4
2.1	Evaluation purpose and objectives.....	4
2.2	Country context	4
2.3	Project overview	6
2.4	Methodology and data collection.....	8
2.5	Limitations of methods and data.....	9
3	Findings.....	10
3.1	Relevance.....	10
3.2	Appropriateness	12
3.2.1	Adaptations in the DMC approach.....	12
3.2.2	Response to new health needs.....	13
3.2.3	Community participation	14
3.2.4	Alignment with the MoH/WHO	15
3.3	Effectiveness	16
3.3.1	General implementation process	16
3.3.2	Achievement of Objectives	18
3.3.3	Changes in access to healthcare	19
3.3.4	Changes in health-seeking behaviour.....	20
3.3.5	Community perceptions on DMC related services	22
3.3.6	Consequences for higher levels of care	24
3.3.7	Effectiveness of specific DMC components	26
4	Conclusion and discussion.....	32
5	Recommendations.....	35
6	Annex.....	38
6.1	Terms of reference	38
6.2	Maps	45
6.3	Interview list	47
6.4	Annual DMC strategy implementation.....	49
6.5	Hospital admissions, hospital mortality, consultations per community site.....	51
6.6	Timeline key events and activities DMC strategy Malakal project.....	54
6.7	List of documents and references	58
6.8	Methodology: calculation of indicators.....	59
6.9	Tables.....	60

1 Executive summary

This case study examines decentralised models of care (DMC) implemented in MSF OCBA's Malakal project in South Sudan. It is a part of a wider evaluation which draws lessons learned from the DMC components of three MSF OCBA projects (Kabo in Central African Republic, Kalehe in Democratic Republic of Congo, and Malakal in South Sudan) to improve current and future DMC interventions. It aims to evaluate the relevance, appropriateness and effectiveness of DMC in terms of access to healthcare.

Politically motivated violence, which broke out in the newly established republic of South Sudan in December 2013, remained intense until mid-2016. Upper Nile state, where Malakal project is located, was particularly affected with numerous deaths and displacements as the different tribes residing in the area allied with opposing groups. By the end of the conflict, the public health system in the area had virtually collapsed and the situation was extremely volatile.

DMC activities in Malakal project were launched in June 2017. The initial design covered a population of 12,000 through community-based and decentralised health activities along the Akoka and Baliet roads, alongside mobile clinics reaching some riverside villages in the region. The curative part of the programme covered the three main killers: malaria, pneumonia and diarrhoea; nutrition for children aged under five; kala azar (KA); and the referral system from the community to higher levels of care. However, by the end of 2019 both the DMC target population and the service package had been reduced, despite repeated proposals for expansion from the field and the DMC technical advisor. The decision-makers in headquarters cited budget constraints and the lower priority given to this project as reasons for the reduction in the service package.

The evaluation employed qualitative and quantitative research methods and a team of two evaluators visited South Sudan from 9 to 20 December 2019. Retrospective analysis of routinely collected medical data was conducted off-site by an epidemiologist.

Relevance:

The Malakal DMC project was timely and relevant according to the population needs and contextual factors (conflict and access), but the programme design was compromised by the small size of the assessed communities.

Although the DMC proposals for 2016 and 2017 did not specify the prevalence of the needs in the area, they identified a total lack of access to healthcare for the assessed populations. The choice to cover three main killer diseases – malaria, pneumonia and diarrhoea – was relevant, given their known impact in South Sudan and was also in line with the 2016 Boma Health Initiative from the South Sudanese Ministry of Health (MoH). Kala azar (KA) was known to be prevalent in the area and malnutrition was particularly a problem in new settlements where returnees, internally displaced people and refugees live.

Appropriateness:

The initial implementation strategy was only partially appropriate: on the one hand, it used the community-based and facility-based decentralised approaches effectively, alongside a referral system to the hospital to ensure continuum of care for excluded communities. However, while addressing the needs of small communities the strategy underestimated the human resources needed for the implementation process.

Appropriate adaptations of the strategy based on improved understanding of the situation were largely insufficient. This included the small expansion of services, such as adding a KA drug supply component to one MSF-supported primary healthcare clinic (PHCC) and adding mental health services to the DMC package. The reduction of services was appropriate on two occasions: the cancellation of antibiotic (ATB) provision in the community due to its misuse; and closing the mobile clinics due to an overlap with another service provider. However, in general the project failed to increase the target population and improve the DMC's coverage and service package in accordance with the needs, despite repeated proposals put forward by the team in the field.

The main uncovered needs in the communities are maternal health and preventive health services (mosquito nets, water and sanitation, immunisation) as well as health promotion (HP) and community engagement. As community engagement activities were not included during implementation, the level of community participation has remained low.

Effectiveness:

The numerous shortcomings of the implementation process, including reductions in services and delays, have resulted in fewer community sites than envisaged by the initial proposal: while seven sites were initially planned, in practice only four to six were operational during the evaluated period. Moreover, there were only six community health workers (CHWs) covering the entire DMC activities in 2019. This resulted in low community health coverage, with only one CHW per 2,010 inhabitants instead of one CHW for 500-1,000 inhabitants as per international MSF standards. Access to services was also low, since only 50% of the target population lives within five kilometres from primary healthcare clinics (PHCC) or CHW sites.

This evaluation could not determine the success of the programme, due to the lack of a coherent implementation plan containing specific objectives that would realistically lead to the attainment of the main DMC goal, as well as measurable target indicators to track their attainment. The tangible impact of DMC activities in Malakal is also challenged by the limited scale of the intervention.

The main morbidities treated by MSF CHWs are uncomplicated malaria, acute respiratory tract infections (ARTI) and acute watery diarrhoea. The management of ARTIs in the community within the Malakal DMC programme is minimal treatment (paracetamol only) and referrals to higher level care, compared to the national and international community-based initiatives which include more substantial treatment like ATB use (included in the Boma initiative and in MSF-OCA's community-based project in South Sudan).

Access to health services for the target population remains low, as reflected by the coverage indicators and the perceptions of community members recorded during interviews with the evaluators. Health coverage is still perceived as limited, but the population acknowledges that access to healthcare, especially regarding malaria, KA and referrals, has improved.

Although the available data are difficult to interpret, the observed consultation trends both in the community and at PHCC levels suggest that the work of CHWs under the DMC package might have reduced the workload and congestion in higher level facilities. The perceived impact of DMC at the primary healthcare (PHC) level is positive and observes decreased severity over time. Due to the small number of admissions from MSF-supported PHCCs, there is no clear effect of DMC at the hospital level, either in terms of mortality or workload.

The DMC programme has seemingly altered community health-seeking behaviour (HSB) by encouraging the use of biomedical healthcare. However, a lack of access to certain services means many people continue to rely on traditional medicine.

General analysis:

Findings from this evaluation show that the DMC project, even in its inappropriately small scale, has made positive changes at the community and health facility levels, and has provided access to healthcare for people who were otherwise totally cut off. By increasing its coverage and service package, DMC can achieve higher outcomes while optimising resources. This will require investment in additional resources for the project, but the increase in outcomes will be proportionally larger, i.e. with a relatively small amount of additional resources the project can gain substantively more results.

Main recommendations - *For detailed recommendations see Section 4.*

For MSF OCBA headquarters

- ⇒ Finalise the community engagement and DMC toolkit, including training material for CHWs, and disseminate these documents to the field.
- ⇒ Develop monitoring tools for DMC activities at project, coordination and cell level.
- ⇒ Create a mobile DMC implementation officer position to provide technical support to projects and the country coordination team.
- ⇒ Clarify the position of MSF OCBA towards the DMC approach and ensure necessary support and resources for its implementation.

For Malakal DMC – MSF-OCBA South Sudan mission

- ⇒ Ensure adequate management tools and implementation process.
- ⇒ Increase the DMC's coverage and target population.
- ⇒ Increase community-based activities.
- ⇒ Ensure budget and human resources for proper management and implementation of DMC.
- ⇒ Ensure uninterrupted drug stocks for CHWs.
- ⇒ Improve data collection, analysis and reporting, implement a proper surveillance system.
- ⇒ Improve the information management system.
- ⇒ Strengthen CHW training, supervision and monitoring.
- ⇒ Ensure adequate health promotion and community participation.
- ⇒ Ensure collaboration and exchange of expertise with other DMC projects in MSF and with external stakeholders.
- ⇒ Improve the referral system and referral criteria.

2 Introduction

2.1 Evaluation purpose and objectives

In response to the barriers that vulnerable people face when trying to access healthcare (resulting from conflict, violence, displacement and/or distance) and in line with its current strategic plan¹, Médecins Sans Frontières (MSF) Operational Centre Barcelona Athens (OCBA) has developed decentralised models of care (DMC) in a variety of countries and projects. MSF OCBA understands DMC as the implementation of care outside health facilities and closer to patients in the community, with the aim to make curative and preventive medical activities more accessible.

The design of the DMC strategy generally contains two types of interventions, adapted to the context of each specific situation: 1) community-based interventions implemented by community health workers (CHW) and/or trained traditional birth attendants (TBA) inside the community (these may include treatment for specific diseases and identification of alarm signs. Severe cases are referred to a higher level of care. These CHWs are members of those communities where the activities are implemented); 2) decentralised interventions implemented in the community but originated in fixed facilities and carried out by MSF staff with higher skill sets.

With the purpose to improve and inform current and future DMC interventions, MSF OCBA commissioned an evaluation composed of three case studies – Kobo in Central African Republic, Kalehe in Democratic Republic of Congo (DRC), and Malakal in South Sudan – where projects with DMC components have already been implemented. Relevance, appropriateness and effectiveness have been chosen as evaluation criteria. For the detailed evaluation questions see terms of reference in Annex 6.1.

The current report is the case study for decentralised models of care implemented in Malakal project, South Sudan.

2.2 Country context

Since gaining independence from the Republic of Sudan in 2011, South Sudan has been marked by protracted conflict. A political power struggle between President Kiir and his deputy Riek Machar has caused waves of violence and split the country largely along ethnic lines, with far-reaching consequences. Countless failed peace deals, mass displacement and a collapsing economy have all but destroyed South Sudan's already fragile infrastructure.²

Despite a lack of definitive data, South Sudan has some of the worst health indicators in the world.³ It has one of the highest mortality rates in the world for children aged under five (96 deaths per 1,000 live births) and deliveries (789 deaths per 100,000 live births).⁴ Health-seeking behaviour is poor, as reflected by late or delayed consultations, high levels of home deliveries and poor hygiene practices. The health service coverage indicators are inadequate: low diphtheria,

¹ MSF OCBA. Strategic plan 2014-2017 and MSF OCBA. Extension of the strategic plan 2014-2017 (2 years)

² "New Estimate Sharply Raises Death Toll in South Sudan". Kulish, Nicholas (9 January 2014). The New York Times. Retrieved 10 January 2020.

³ *Social Assessment Report for Essential Health Services Project (EHSP)*, UNICEF South Sudan, November 2018

⁴ *Health Briefing Note, December 2019, Unicef*. Accessed on 10.01.2020

<https://www.unicef.org/southsudan/media/2086/file/UNICEF-South-Sudan-Health-Briefing-Note-Dec-2019.pdf>

tetanus, polio (DPT3) immunisation coverage (33%), frequent outbreaks of epidemics and vaccine preventable diseases, and low OPD utilisation rate (0.38 HMIS 2012).⁵

A new transitional government, established by April 2016⁶, did not last long: fighting between the two rival militant groups (SPLA and SPLAiO) broke out in July 2016, and resulted in the expulsion of Riek Machar and other SPLAiO leaders.⁷ Despite signing a new peace deal in September 2018⁸, South Sudan has continued to experience violent conflict, with the government military advancing on opposition held territories, implementing a divide and rule strategy.

Civilians have borne the brunt of the crisis in South Sudan. Upper Nile state, home to three main Nilotic tribes: Dinka, Shilluk and Nuer, has seen much of the violence.

The project area

Formerly the second largest city in South Sudan, Malakal was destroyed right at the beginning of the conflict in 2013 and its entire multi-ethnic population sought shelter in the UNMISS Protection of civilians (PoC) compound. Since then, Malakal has changed hands several times, destroying the city and separating its population along ethnic lines between the PoC and Malakal city.⁹

The situation in Upper Nile began to stabilise in early 2017,¹⁰ prompting internally displaced people to return home to Malakal and its surrounding rural areas. However, they lacked supporting infrastructure and public services and the return process was poorly monitored and documented by both the government and the international community.

Access to healthcare is very poor in South Sudan; the public health system has virtually collapsed as a result of the protracted civil war. Approximately 80% of existing services are provided by non-governmental and faith-based organisations. The country faces a severe shortage of trained public health staff and it relies on inadequately trained or low skilled health workers.¹¹ In 2012, after it was estimated that health services covered only 25% of the population¹², the MoH proposed a new programme: the Boma Health Initiative, aimed at enhancing community level service provision for bridging the vast gaps in healthcare.

In Malakal PoC, MSF is the only actor providing secondary healthcare for IDPs in the camp.¹³ In Malakal town hospital, MSF addresses the secondary healthcare needs of the city's residents who cannot access facilities inside the PoC. Outside the city, MSF runs a small-scale DMC service, to target the lack of public health infrastructure, donor fatigue and constraints for humanitarian help in the periphery.

⁵ The Community Health System in South Sudan: The Boma Health Initiative, July 2019, MoH of the Republic of Sudan

⁶ A ROCK & A HARD PLACE: OPERATING CHALLENGES FOR AID ORGANIZATIONS IN SOUTH SUDAN' April 2017

⁷ "[South Sudan conflict: Sacked VP Riek Machar goes into exile](#)". bbcnews.com. 18 August 2016. Retrieved 19 August 2016.

⁸ SSD Mission AP 2019 FINAL. MSF OCBA

⁹ Malakal Combined Assessment, IOM displacement, February 2018.

¹⁰ Handover report Helmer Charris FIELDCO; Sept. 2019

¹¹ *South Sudan Picture, Global Health work alliance, retrieved 10.01.2020*

<https://www.who.int/workforcealliance/countries/ssd/en/>

¹² HEALTH SECTOR DEVELOPMENT PLAN 2011 - 2015 Government of South Sudan Ministry of Health

¹³ *Annual Plan 2018*. OCBA South Sudan mission

2.3 Project overview

MSF OCBA runs three projects in South Sudan: Malakal, Yambio, and Ulang.¹⁴ In Malakal and Ulang, the aim is to support primary and secondary healthcare provision, while Yambio is an HIV test and treat project. For several years, MSF's modus operandi in South Sudan was a facility-based approach focused on IDP camps and adjacent communities.

MSF OCBA has been present in Malakal city since 2013 when the current crisis began. Addressing the needs of the IDPs in the UNMISS PoC compound, MSF OCBA provided secondary healthcare through the PoC hospital. After the Dinka were forcibly relocated from the PoC to Malakal town in February 2016, MSF OCBA decided to address the health needs of Malakal inhabitants through OPD/IPD services which were later transformed into a town hospital.

In 2017, MSF OCBA decided to extend its support in the region through launching DMC activities Upper Nile state. Internal factors which led to this decision included a growing positive attitude in MSF OCBA towards community-based approaches since 2012. In the past, MSF OCBA has implemented decentralised models of care without a conceptualised framework or systematic guidance. Following the WHO's successful implementation of community-based care (PECADOM) during the malaria outbreak in Niger, MSF OCBA decided to expand DMC approaches in other contexts, as was reflected in its 2014-2019 Strategic Plan. The Malakal team were also exploring ways to expand the project and "go out of the hospital walls".

DMC activities in Malakal aimed at saving the lives of disadvantaged populations by providing decent healthcare for the three main killers (malaria, ARTI and acute watery diarrhoea) as well as kala azar (KA) and severe acute malnutrition (SAM). Establishing a community-based surveillance system for the detection of possible outbreaks of disease and the assessment of morbidity/mortality trends was another goal. The goal to reduce morbidity and mortality for the main killers, and bring the treatment closer to the community was broken down in four specific objectives:

- Ensure adequate capacity building of medical staff with a special focus on the above-mentioned main morbidities.
- Supply of drugs, RDT and renewables. If the facility has already one partner for supplier, MSF will cover any gaps and shortages.
- Implement a functioning surveillance system (EWS) and improve data collection and reporting to detect and respond to potential outbreaks.
- Decentralise the treatment of the main killer diseases in the community.

DMC activities commenced in June 2017¹⁵ and covered a population of almost 12,000 living along the Akoka and Baliet roads in Malakal's periphery, as well as reaching additional communities (of unknown size) with mobile clinics which ran along the riverside. However, the part covered by CHWs was very small with 4,700 people, 3,400 on Akoka and 1,200 in Baliet (see Annex 6.9 Table 2). Malakal Map in Annex 6.1 depicts the DMC locations.

Main activities for **the DMC community sites**¹⁶ included the management and referral of the main killer diseases and a surveillance system. The curative part of the programme covered testing and treatment of simple malaria for all population groups; referral to higher level care after an initial

¹⁴ Melut/Aburoc was closed or merged with Malakal.

¹⁵ Malakal proposal for DMC 01.04.17

¹⁶ In Akoka area: Wunpit, Unakoich, Panyshan, Peldiarowei, Atabtiab, Baibior, Denchuk. In Baliet area: Guel Kouk and Guel Achel

dose of rectal Artesunate, the medication used to treat malaria; treatment of acute watery diarrhoea and malnutrition for children aged under five; referral of complicated cases and all suspected cases of kala azar to PHCU/PHCC/MSF facility; disease surveillance in Akoka region carried out by trained community health workers (CHW). ARTIs are planned to be implemented in a second phase of the strategy, with proper preparation and training of CHWs.¹⁷

Main activities for the **supported primary healthcare units (PHCUs)** included the management of referrals made by CHWs and further referrals; disease surveillance; support to drug-supply systems (for the main killers not covered by other actors); and assistance for patients with kala azar.

Mobile clinics served riverside villages on the west bank of the river¹⁸ and were operated by an outreach team detachable from Malakal town. The target population size was not specified. Main activities included treatment for children aged under five, management of emergency cases, preventive treatment for pregnant women (malaria, infection prevention) and referrals for children aged under 15.

Since 2017, the DMC interventions have been implemented inconsistently and generally reduced, despite the fact that the population size in the area increased over time (from 12,000 in 2017 to 17,000 in 2019). The project experienced intermittent activities (e.g. in Guel Achel), delays (Atiabtiab site) and closures (Guel Kok). Support to Riang PHCU and Baliet PHCC stopped in 2018. The mobile clinics, operational since the beginning of the strategy, were also closed at the end of 2018.

The target population in the DMC area was only a small fraction of the Malakal project – about 24% of the project population in 2019 – which meant that the hospital absorbed most of the resources and management attention.¹⁹ The DMC sites covered a population of 17,000 (12,000 in Akoka and 5,000 in Baliet) whereas the population the two hospitals in Malakal served was 53,000 (28,000 for PoC and 25,000 for Malakal town) and 8,672 people in Aburoch.²⁰ By 2019, the direct target population for DMC activities comprised only 8,030 people residing in Akoka and Baliet (Annex 6.9, Table 3).

By 2019, the DMC service-package had decreased compared to 2017. This was due to the reduction of support to treat ARTIs in the community (without ATBs) and reduced assistance to health facilities (kala azar only). There was also no identified system in place for health promotion and community engagement.²¹ The current services are as follows:

- Community-based services provided by CHWs who diagnose and treat simple malaria and diarrhoea (for children aged under five); ARTI management is reduced to diagnosis and referrals. Referrals include all severe cases and suspected kala azar cases. Basic community surveillance is also part of the package.
- The support to the health facilities is confined to kala azar diagnosis and management only, although MSF also organises referrals of complicated patients from the clinics to the hospitals (PoC and MTH).
- Technical support and provision of water purifiers to health facilities, waste management in health facilities and drug provision according to the needs.

¹⁷ ARTIs were introduced in the DMC package immediately due to the alleged pressure from the community, but without a proper preparation and training; therefore have quickly become misused and were stopped altogether.

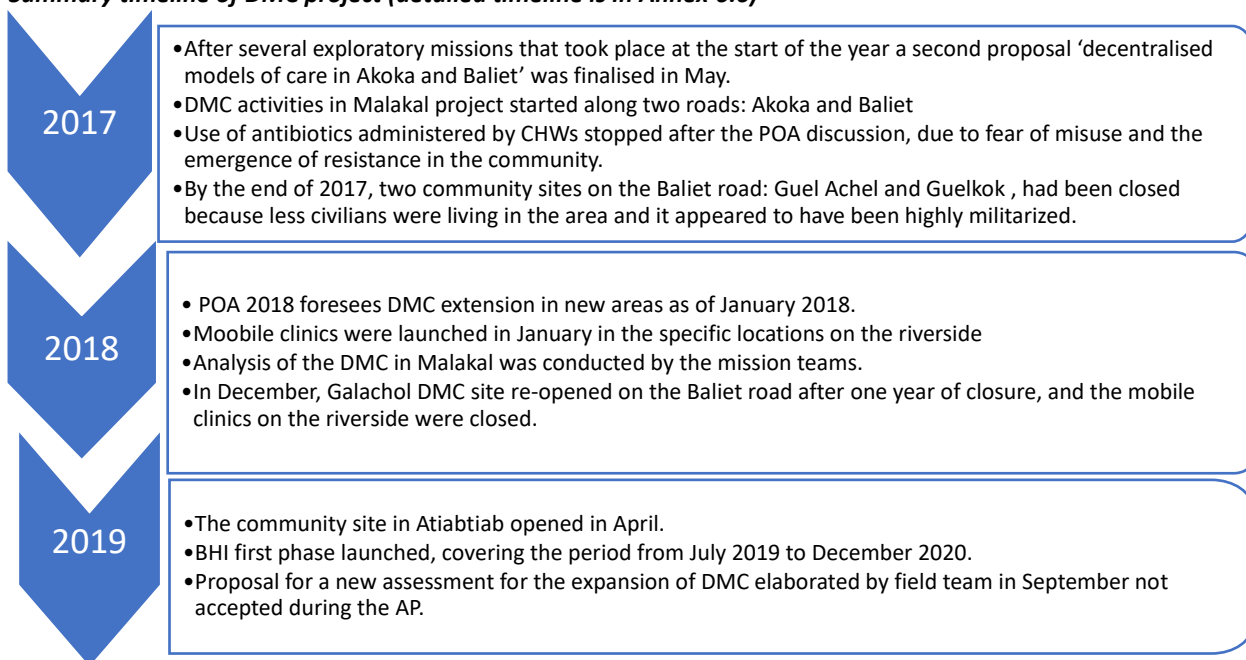
¹⁸ In 2017 consultations took place in Wau Shilluk, Canal, Dolieb, Ashabnil (IDPs), and in 2018 in Riangmon, Ashabnil, Dolieb, and Wau-Shilluk

¹⁹ Malakal project mid-year review, 2019

²⁰ See Annex 6.9

²¹ except in the mobile clinics where one Health Promoter (HP) was responsible for passing general messages

Summary timeline of DMC project (detailed timeline is in Annex 6.6)



2.4 Methodology and data collection

The evaluation is based on a mixed methods case study design, combining qualitative methods with quantitative retrospective analysis of secondary medical data routinely collected at project level. Qualitative data collection took place primarily during a field visit in South Sudan (Juba and Malakal) between 9 and 20 December 2019 and was carried out by a team of two evaluators. Retrospective analysis of routinely collected medical data was conducted off-site by an epidemiologist with input from the field evaluators. Triangulation of different sources of qualitative information was used for the validation of findings. Early feedback on preliminary findings was sought during debriefing sessions with the project and country coordination team. Qualitative data was collected through:

- Review of key documents: MSF project documents, annual plans and reports, head quarter field visit reports, research reports; national policy documents, context documents and others (full list in Annex 6.7).
- Semi-structured interviews and focus group discussions (list of interviewees in Annex 6.3): Individual interviews with key MSF informants, key former MSF staff, health workers, DMC staff and patients at Malakal hospital (n=41); Focus group discussions (FGD) with community leaders/members (male and female separately) on both roads (n=6). Interview guides were developed for each group of interviewees.²² To communicate with informants who didn't speak English, a female and a male translator were hired and trained on the spot.
- Field observation and site visits in Baliet and Akoka: visit to one PHCC (Adong) out of the two supported; conversations with all six CHWs running community-based activities

Sampling: key informants were sampled purposively, with some individuals interviewed on convenience during health facility visits. For site visits, a sample of three community sites (from a total five) in Akoka were selected, while the only active CHW site in Baliet was visited.

²² See MSF: Evaluation of decentralized models of care in DRC, CAR and South Sudan: Evaluation Protocol. September 2019.

Analysis: Transcribed summaries of interviews were coded using NVivo software and traditional coding by hand, categorised and analysed for content according to the evaluation criteria and questions and interpreted jointly by the two evaluators.

Quantitative data was collected from:

- Population figures originated from the “*Malakal Project MYR 2019*” dated 02.05.19
- Number of CHWs according to the info collected in interviews
- Referral data as reported by CHWs to PHCCs
- MSF health management information system (HMIS) database for medical data collected at health facilities, including CHW and hospitals
- Medical data collected at PHCCs in “2018 DMC Malakal SSD database W28”

We selected the following health services:

- For OPD: external consultations, paediatric external consultations, gynaecology/obstetrics external consultations, emergency room, observation room, ambulatory therapeutic feeding centre (ATFC)
- For inpatient department (IPD): hospitalisation ward, paediatric ward, surgical ward, gynaecology/obstetrics ward, intensive care unit /paediatric intensive care unit (ICU/PICU), inpatient therapeutic feeding centre (ITFC)

Analysis: for this evaluation, the following indicators have been calculated: accessibility coverage, availability coverage, utilisation rate (contact coverage), referral system, and health facility-based mortality. Details on the methods used for each calculation can be found in Annex 6.4. Details on the methods used for each calculation can be found in Annex 6.4.

Ethical considerations: after an explanation of the evaluation, its objectives and procedures, the free decision to participate and withdraw from the interview at any time, and the assurance of anonymity in the report, participants provided verbal consent. Translators were trained in informed consent and the importance of maintaining confidentiality was emphasised. An ethical review exemption had been granted by the MSF OCBA’s Medical Director.

2.5 Limitations of methods and data

Due to the limited number of days for fieldwork, combined with distance and long travel time, the time spent at the DMC sites was limited. The evaluators tried to balance this by interviewing different informants at the same time. Recall difficulties, poor documentation of the project-related events, weak knowledge management systems and a high turnover of international staff also made it difficult to establish precise sequences of events and reasons for changes in some cases. Furthermore, due to the short time for data collection, the validity of the information on health-seeking behaviour is limited and no baseline information was available.

Seasonal holidays also caused further constraints as some of the respondents were unavailable for the evaluation. Response bias cannot be excluded, as evaluators may have been perceived as MSF staff. Evaluators tried to reduce this bias by explaining their role, ensuring anonymity and encouraging interviewees to be open about MSF where required. Translation may have biased some findings from interviews.

As for the quantitative data, there was no data on quality of care, only sporadic data at PHCC level, no meaningful data on community mortality, and referral data was only available for a short period.

3 Findings

3.1 Relevance

According to WHO/UNICEF figures, correct treatment of pneumonia, diarrhoea, and malaria is one of the most powerful interventions for reducing mortality.²³ Seventy-five percent of deaths in children aged under five in Africa, are caused by these three main killers and other newborn conditions. Malnutrition is associated with approximately one-third of child deaths across the continent. For all age groups, the three main diseases, alongside HIV/AIDS, are the top four killers.²⁴ In South Sudan in particular, by 2012 the three main killers constituted 77% of all OPD consultations for children: malaria was responsible for 50%, while diarrhoea and pneumonia accounted for 17% and 10% respectively.²⁵ Therefore, focusing on these three killers through DMC activities is highly relevant to the population needs.

When the DMC project was designed, access to healthcare was almost non-existent due to a combination of factors including the fragile security situation, collapse of existing health facilities, geographical barriers including long distances and economic barriers. Although the security situation has improved the other barriers remain. In most places, MSF is the main medical actor and the only organisation conducting referrals by boat.

The needs identification process at the start of the DMC project was not systematic or well documented. The DMC proposal from 2017 is based on a series of exploratory missions, but the assessment results are not available²⁶ and the size of the assessed communities for the programme was small from the beginning.²⁷ An exploratory mission to Akoka was conducted in November 2016, and two health structures were assessed; Rom PHCC and Akoka PHCC (which was partially supported by ICRC). The population size, their access to healthcare, capability of movement and health-seeking behaviour were mapped in nearby villages. In autumn 2016, MSF assessed a health facility in Baliat – a PHCC supported by IMC. The surrounding area was occupied by armed groups and could not be mapped.

The initial DMC proposal (October 2016) outlined the dire unmet health needs in the peripheral areas surrounding Malakal. However, the assessments were largely informal and were not documented.²⁸ In Akoka, MSF found a complete lack of access to healthcare and poor vaccination coverage. The healthcare posts assessed were either closed or without drugs. The villages in Akoka were cut from roads by swamps. In Baliat, the needs for kala azar were obvious because of the high hospital admissions from this area. Other health needs could not be explicitly assessed due to insecurity in the area, but they were assumed to be high. Large distances and lack of transportation means also obstructed access to health facilities.

The May 2017 DMC proposal defined specific activities and geographic locations for the intervention. It included population mapping, access constraints, distances, assessment of facilities and priority needs. A series of exploratory missions had taken place following the first DMC proposal, to better understand the needs and define the intervention model. As discussed in the

²³ WHO and UNICEF: Integrated Community Case Management: An Equity-Focused Strategy to Improve Access to Essential Treatment Services for Children; Am. J. Trop. Med. Hyg., 87(Suppl 5), 2012, pp. 6–10

²⁴ FACTSHEET: The leading causes of death in Africa in 2012; <https://africacheck.org/factsheets/factsheet-the-leading-causes-of-death-in-africa/> accessed on 03.02.2020

²⁵ MoH of SS, The Boma Health Initiative, March 2016

²⁶ As reported in the second proposal: 'Malakal Proposal for DMC 01.04.07', page 1.

²⁷ See in the Project overview chapter: 4,600 people in the community sites, in total 12,000 target population.

²⁸ Interviews with key informants.

following chapters, the activities were set up on a small scale and with limited resources. The mortality survey initially planned as a baseline was never finalised due to HR constraints²⁹. Without the supporting surveillance data, the second DMC proposal from May 2017 prioritised the three main killers, kala azar and nutrition.

External factors relevant to the project were assessed and taken into account while designing the model. In mid-2016, internally displaced people began returning home to Malakal, leading to the establishment of new settlements with poor infrastructure and households with unstable income. The previously difficult security situation had somewhat improved, allowing MSF and community members to move around more freely. The poorly functioning PHC facilities suffered from a lack of supplies and could not serve patients properly. The main difficulties communities faced when trying to access healthcare included geographic constraints and remaining security restrictions.

The initial population size for the project was very small. The total population living across Akoka and Baliet was estimated to be approximately 12,000 people (higher than the 8,000 people currently covered by DMC activities). However, the communities without access to health facilities comprised only 4,700 people: 3,490 in Akoka and 1,210 in Baliet (see table 2 in Annex 6.9). In the evaluators' opinion, the small population size did not compromise the relevance of the DMC programme, especially at the beginning of the intervention, because it allowed the project to gain vital experience before expanding activities to increase impact.³⁰

The DMC design properly addressed the main killer diseases and included locally prevalent kala azar. It established continuum of care through a referral chain from the community to HF and from HF to hospitals. Surveillance and a proper monitoring system were intended from the start of the programme. The relevance of the malnutrition component (for children aged under five) cannot be evaluated based on the available data but given the presence of the newly settled populations irregular food availability can be assumed.

Engagement in facility-based decentralised interventions was relevant to support the referral system and the primary healthcare system needed support in order to ensure minimum standards for the community referrals.³¹ A total of five MoH nurses (on MSF incentives) from the three selected PHCUs would be engaged in the DMC programme: four nurses in Akoka (two nurses for each Rom and Rieng PHCUs) and one nurse in Baliet (Adong PHCU). Availability and functionality were the criteria for the selection of these facilities³².

The relevance of the mobile clinics cannot be assessed due to lack of information: little is known about the population size, available services, and the remaining needs, which means the evaluators could not assess the relevance of this component.

Currently, the Malakal DMC operates with just six CHWs and demonstrates low coverage indicators (see the effectiveness chapter) - a result of the lack of appropriate adjustments and effective implementation process.

²⁹ The second proposal: 'Malakal Proposal for DMC 01.04.17.

³⁰ Own observation, multiple interviews, Proposal documents.

³¹ Multiple interviews

³² Not all clinics were open or functional and unable to serve patients. MSF selected clinics which were already open and functioning to a degree.

3.2 Appropriateness

3.2.1 Adaptations in the DMC approach

The initial strategy employed community and facility-based decentralised approaches to ensure a continuum of care for excluded communities. However, the related human-resources needed were underestimated while addressing the small communities.

A few appropriate adaptations of the DMC strategy included:

Support to Rom PHCC

DMC activities were appropriately extended to Rom PHCC at the beginning of 2019 with supplies of drugs to treat kala azar. Initially, this facility received drugs from the other actors (IMA and IMC), but problems with supplies persisted.

Adding mental health to the DMC package

The inclusion of mental healthcare in the facility and community-based packages was equally appropriate, as there is no other actor in the area offering these services. Cases are identified by clinical officers in the PHCU/PHCC and by CHWs. The nurse activity manager (NAM) discusses the strategy and treatment plan with the mental health officer and makes a decision about referral. MSF provides medication³³ and the NAM or CHW monitor the patient's progress.

Ending the provision of ATBs in the community

The initial introduction of ATB treatment for ARTIs was not well prepared, as it was meant to be introduced after thorough preparation in the second phase of the DMC implementation strategy.³⁴ Instead, its implementation was rushed in the beginning due to strong pressure from the community, compromising its success. Concerns about the overuse of ATBs and difficulties to ensure appropriate treatment were relevant. Therefore, the cancellation of their use by the end of 2017 was a right decision.

The closure of mobile clinics

Closure of the mobile clinics at the end of 2018 was an appropriate decision, given that they covered the villages near the military hospital resulting in many people receiving double doses of antibiotics from both MSF and the hospital at the same time.

A few Inappropriate adaptations of the DMC strategy included:

Failure to adapt to growing needs

Appropriate adaptations of the scope and package did not happen. Proposals from the previous MSF field teams and the DMC technical advisor, to increase the DMC's geographical coverage and service package³⁵ were not accepted by operations in Barcelona.³⁶ In September 2019, the field proposed to increase DMC services and included a clear plan to assess the Shilluk area on the west bank (for medical impact and impartiality purposes³⁷). This was removed from the plan of action (POA) 2020, with the reason that current DMC activities are not demonstrating impact: based on

³³ 2 weeks medication is given to patients, usually to the family

³⁴ DMC analysis document, Handover report, NAM Malakal, 2018.

³⁵ The initial implementation phase of malaria, acute watery diarrhoea, ARTI referral and surveillance; second-consolidation; third- captilization with inclusion of HIV testing, MH and SV/TPR referral components after mid-year. CHW recruitment to have 50% females to enable this. *AP 2019, SS mission of MSF-OCBA*

³⁶ POA 2019, 2020

³⁷ According to Small Arm sept 19 survey, DISPLACED AND IMMISERATED The Shilluk of Upper Nile in South Sudan's Civil War, 2014–19, situation of Shilluk population living on the West Bank has little access to humanitarian aid.

the low number of consultations recorded in the community compared to Yambio DMC and the Malakal hospital projects, and the high costs associated with the programme given the low numbers.

Lack of population assessment

Assessment and mapping of the fast-growing population in Akoka and Baliet was not carried out regularly or frequently. The current number of CHW sites is outdated: a report from September 2019³⁸ identifies three CHW sites with inaccurate population size³⁹, but they have not yet been re-assessed. This makes it impossible to adjust the number of CHWs to cover the real population size and increase their impact in the community. In addition, most CHWs reported to also receive patients from the surrounding areas not covered by DMC services, which further misrepresents the availability coverage indicators (examples are Atiabtiab,⁴⁰ GuelAchol and Denchuck⁴¹).

The supported PHCCs were not assessed regularly and the needs for improvements were not covered. For example, Rom PHC is officially registered as a PHCU and does not receive a support from UNICEF/IMC for maternity services. There is only one bed for deliveries, which makes Rom inadequate to receive referrals. The lack of assessment did not allow MSF to look for solutions in collaboration with the MoH and other actors under the Boma Health Initiative (BHI).

3.2.2 Response to new health needs

The priority unmet health needs at the community level, as identified by the evaluators during the field visit, are maternal health (ANC, TBAs, PNC); acute watery diarrhoea in adults; skin diseases (including scabies); snake bites; disability and blindness. Maternal health and sexual and gender-based violence (SGBV) were not incorporated in the community component, despite their inclusion in the annual plans for the last two years. According to all respondents and AP documents, the lack of access to healthcare for pregnant women is significant; there were the plans to expand DMC to maternal health with the training and engagement of TBAs. The plans were not approved by operations in Barcelona, with the reason given that the DMC component of the project demonstrated little impact and was expensive. This opinion was not supported by documented evidence from the programme or other DMC projects. Some MSF staff are convinced of the contrary: that DMC is cheap and cost-effective when implemented properly.

The evaluators and communities also identified unaddressed needs in HP/CE and preventive measures including the provision of safe water, mosquito net distribution and vaccination. These activities were either irregular or non-existent. According to some reports, water purification tablets had been regularly distributed during the dry season by MSF up until 2018 but were stopped thereafter. Vaccination on the other hand is totally neglected. MSF has also occasionally distributed mosquito nets to CHWs on their request, so that they could give them to pregnant women. *'We did an assessment for mosquito net distribution in Nov 2018, we counted 189 households in need but MSF never did the distribution, they said they would ask another NGO. No feedback on the reasons.'* (CHW interview).

³⁸ NAM handover report

³⁹ Atiaptiap Peldarawei Wunpieth

⁴⁰ 4 other villages: Mayon, Werkiech, Baibior, Wun-Luenj.

⁴¹ Payuel, Arielweng, Baideng, Awan.

3.2.3 Community participation

Community participation⁴² in design and launching

The project design took place during ongoing conflict. According to the MSF staff involved in the needs assessment, the population was scattered and it was difficult to gather the communities together – except for a few leaders. Most health posts were closed or had no supplies. During the initial assessment, the MSF team met health staff and a few community leaders. They were able to discuss community needs, but there was no exchange of ideas on the design and set-up of the project. Given the circumstances, though it may not have been feasible to develop a more participative process of co-design, wider consultation involving different members of the community would have provided a better understanding of the needs. The MSF team were limited in their contact with the communities during the launch of the programme, particularly for the recruitment of CHWs and in-kind contributions such a *tukul* (hut) for the CHW activities. Recruitment of CHWs was identified by the community as their main participation; and a few leaders recalled meetings to discuss population needs.

Community participation in implementation

During the implementation of the programme, there was no regular engagement with the community. The programme did not include community engagement (CE) and no CE plan was put in place. Consequently, the level of community participation varied over time according to the expertise and time dedicated by MSF staff. As the DMC programme was not prioritised by the mission, it was coordinated by junior staff, and experienced high turnover with often limited understanding of community engagement.

MSF exchanges with different members of the community were mostly restricted to providing information on decisions taken. This was carried out in the villages with CHWs, but not in others. During the FGDs, the community members mentioned meetings with MSF took place during 2017 and 2018 once or twice a year. In 2019 it was mentioned that MSF had not conducted any meetings with communities. A leader of one of the villages recalled: *“MSF first visited the village in 2017. They came again in 2018 and told us they were ready to start the programme; this was the last meeting we had.”* The lack of engagement is particularly relevant in the case of women: there has been no real effort to specifically target women. During a female FGD, the evaluator was told, *“you are the first to come to talk to us women.”*

Community participation and monitoring:

The low level of community engagement translates into community perception that MSF makes little effort to take their feedback into account.

Participants in FGDs repeatedly mentioned a lack of direct contact with MSF and lack of feedback on issues that they have raised. *“If we want something, we talk to the CHW, but there is no direct contact with MSF. It would be good to talk directly, like we are doing with you (the evaluator), not only through the CHW”*; *“Feedback is not there, even if MSF can’t solve a request, they should take the time to respond”*. In an FGD with men they added, *“MSF doesn’t listen to what people say”*. In several cases, informants mentioned that the evaluation was the first time they have had the opportunity to discuss and provide feedback on the programme.

⁴²The term ‘participation’ is often used interchangeably with ‘engagement’; participation is the most common form of engagement discussed in the literature. One of the earliest humanitarian definitions appears in the handbook Participation by Crisis Affected Population in Humanitarian Action. Alnap 2009: <https://www.alnap.org/help-library/participation-by-crisis-affected-populations-in-humanitarian-action-a-handbook-for>

The MSF outreach team agreed on the need to spend more time on community engagement and on being more proactive: *“We only do when there is a problem, it would be better to talk to the community before the problem.”*

It is important to mention that MSF already has some experience in setting up feedback mechanisms. This was the case of the steering committee in Malakal PoC, which included different actors such as community leaders, TBAs and women’s associations.

Community participation and ownership

As consequence, the level of community ownership is low. The contribution of the community is limited to the donation of a *tukul* (hut) as small health post, but only three of the six villages provided this infrastructure for the programme⁴³. One CHW mentioned the lack of this infrastructure as main constraint, *“I have no tukul, the community didn’t give it and MSF didn’t ask again.”* CHWs pointed out that MSF needs to engage in further discussions with the community on this issue. This lack of ownership is a consequence of low community participation. In order to empower the community to take a more active role in their own health, it is important to improve the level of community participation.

Much effort and dedication will need to be made to ensure community participation, considering that many South Sudanese communities have relied on humanitarian aid for so many years. However, there are past good practices which could be recovered, for example in 2017 when the community cut the weeds in the river to allow an MSF boat to reach Rom PHCC. This practice was discontinued and now during the rainy season MSF boats can’t get to the PHCC for referrals.

3.2.4 Alignment with the MoH/WHO

BHI has replaced iCCM⁴⁴ in South Sudan with a more comprehensive community-based package. BHI is an MoH strategy developed in 2017 which aims to strengthen the health system in community with three objectives: 1) develop community health structures as a formal component of the national health system at the Boma level (a Boma is the small administrative unit in South Sudan); 2) increase access to quality health promotion, disease prevention, and selected curative services through community engagement; 3) implementation of the BHI through inter-sectoral collaboration and community participation.

UNICEF supports BHI implementation in Upper Nile state with its implementing partners: Cordaid, CASS, World Vision, Relief International, IMC, USAID, CordAid and Nasir.

The current BHI package is a simplified version of the initial BHI: the basic package has three phases planned to be implemented progressively with at least one-year intervals between the phases:

- The first phase comprises management of the three main killer diseases of children aged under five, with referrals to health facilities organised by communities.
- The second phase comprises safe motherhood and includes ANC, safe delivery, PNC, family planning, SGBV and vaccination.
- The third phase consists of the management of communicable diseases including HIV and TB.

⁴³ In one of the villages, the CHW told the evaluators that the community wanted the “tukul” back. We heard from the Atiabtiab

⁴⁴ Integrated Community Case Management (iCCM) is an equity-focused strategy that complements and extends the reach of public health services by providing timely and effective treatment of malaria, pneumonia and diarrhoea to populations with limited access to facility-based healthcare providers, and especially to children under 5.

The selection of Bomas, Boma health workers (BHWs) and their supervisors is complete, Boma Health committees, the community feedback mechanism, have been organised and the training of BHWs is ongoing. Onsite monthly supervision is planned with one supervisor for 20 CHWs. The implementation is scheduled to start in January 2020.

DMC and BHI have similar objectives which aim at delivering preventive and curative health services in the communities. They both cover areas more than five kilometres from the nearest PHC facility, and the medical packages focus on main killers (malaria, ARTIs and diarrhoea).

The medical package is broader for BHI than for DMC, as it includes the treatment of pneumonia with ATBs in the first phase, and safe motherhood in the second phase. On the other hand, MSF target groups are wider (e.g. the inclusion of male adults). The service coverage for one BHW is 200 people, whereas one MSF CHW is responsible for 500-1,000 people. BHI standards were derived from lessons learnt during the piloting of the strategy in Twic and Gogrial West in 2017-18. The remuneration rates are also very different in the two approaches.

As the MoH can only cover 30% of the Bomas in the country, the BHI coordinator has expressed interest in MSF covering other areas, even with a slightly different package. The only request is harmonious coordination and the exchange of information and data.

There has not been much communication on the BHI and DMC coordination between UNICEF and MSF in Malakal. Despite the importance of knowledge on the mapping of the BHI activities, in order to avoid duplications and coordinate activities, this information is not known by MSF. Some MSF respondents noted the poor quality of work by the implementing partners in Malakal discouraged them from collaboration. Others were not aware of the Boma Initiative at all.

3.3 Effectiveness

3.3.1 General implementation process

Overall human resources for the DMC were too small compared to the needs. The MSF implementation team consisted of one outreach nurse activity manager (NAM), one nurse and one logistics staff, while a health promotion specialist was not included in the team. In total, seven CHWs were proposed to cover the community sites: five CHWs in Akoka area (Wunpit, Unakoich, Panyshan, Peldiarowei, Atabtiab, Baibior, Denchuk) and two in Baliet area (Guel Kou and Guel Achel).⁴⁵ As the communities without health facilities comprised only 4,700 people in both areas (3,490 in Akoka and 1,210 in Baliet) the ratio was one CHW per 671 people. Although this ratio corresponds to MSF standards of 500-1,000 people for one CHW, it does not correspond to the South Sudanese Boma Health Initiative that suggests 200 people per one CHW. There were no plans for additional resources to be made available (this could not be found in interviews or documents), such as health promoters or TBAs to share the work with CHWs (as in other DMC projects).⁴⁶

The DMC community component was suitably planned to be implemented gradually over different phases. Malaria was the first planned⁴⁷ with other activities to be added progressively based on the assessment of the CHWs' skills and lessons learned. ARTIs and antibiotics were planned for the

⁴⁵ The second proposal: 'Malakal Proposal for DMC 01.04.07.

⁴⁶ In DRC this role was covered by the Health promotion Community Workers, while in CAR – by TBAs.

⁴⁷ DMC Malakal analysis. February 2018. MSF-OCBA

second phase, after thorough preparation of the CHWs on ATB treatment.⁴⁸ Although planning was consistent with the MSF and BHI approaches, the implementation did not materialise this way.

Improper planning, preparation and prioritisation:

One of the factors that compromised the effectiveness of implementation of DMC services in Malakal was the perception of some people in MSF that the DMC was a secondary, less important component, as two interviewees reported: *'We gave less weight to DMC compared to the massive hospital in Malakal. The point of visibility of the project that influenced us. We didn't see that DMC made a difference.'*; *'DMC was the side programme'*.

The DMC NAM position was charged with activities beyond their job description: vaccination campaigns outside of DMC and the supervision of the HP in Malakal town hospital. These additional tasks diverted the attention away from their main duties managing DMC, particularly for those on first mission.

Stockouts in supplies for CHWs remain a problem, especially in the community sites with larger populations, even 2.5 years after the start of the DMC. The drug distribution system is not based on consumption, and it does not perform a comparison of consumption with the morbidity registered by the CHWs. Hygiene and waste management has not been prioritised either: there is a problem with medical waste management, drinking water, and hygiene in general.

The treatment of ARTIs with ATBs was launched without proper preparation of the CHWs or assessment of their skills.⁴⁹ This compromised its success and the practice was stopped at the end of 2018. Since the withdrawal of ATBs, the ineffective management of ARTIs is an important healthcare gap in the community, as treatment is only available through referral to higher level care. ATB provision is managed by CHWs under BHI, and MSF OCA is also using ATB treatment in the community under stringent supervision. There is growing evidence of effective ATB provision carried out in the communities by CHWs in other African countries,⁵⁰ e.g. in Uganda, which could be a reason to reconsider reintroducing ATBs in Malakal DMC, with a good preparation phase.

The referral criteria and identification of emergencies by CHWs and PHCC staff are not well defined and adhered to (*see the referral chapter*).

Reduction and delay resulted in fewer functional community sites than proposed (four to six instead of seven): in Baliet, DMCs was reduced to kala azar support in Adong PHCC in 2018, as the community sites were closed at the end of 2017 (Gel Achol and Gelkok). The reasoning was the presence of militants and lack of civilians in the area. By the end of 2018, only the Gel Achol site was re-opened. This one-year period without a community component diminished coverage of the health needs and diverged the implementation from real DMC approach.

Inclusion of the community in Atiabtiab (in the Akoka area) only happened in 2019, despite being planned in the original proposal. The reasons for this delay are not documented, and the staff interviewed did not have further information.

A missed opportunity was the lack of exchange of experience between the Malakal DMC programme and other relevant projects in South Sudan (Yambio DMC and the MSF OCA community-based projects). MSF OCA is currently working on a new community-based strategy, which should be shared with the Malakal DMC team.

⁴⁸ Handover report, NAM Malakal, 2018.

⁴⁹ Handover report, NAM Malakal, 2018.

⁵⁰ Interviews with UNICEF and IMC, input from MSF DMC advisor.

The collaboration with the other actors is not ideal: many organisations are involved in the provision of healthcare in Upper Nile state, and even though some are perceived to be ineffective, there is still a need for further collaboration and advocacy.⁵¹ It is important to ensure that BHI activities do not overlap with the MSF interventions: the health forum provides a potential platform for exchange and collaboration.

3.3.2 Achievement of Objectives

The specific objectives of the DMC (listed in the Introduction) do not fully reflect the intended impact of the intervention, for example preventive and referral systems were not included; similarly, measurable indicators are not provided or followed. DMC activities were included as part of the Malakal project in the annual reports/plans and were presented with only a few non-specific indicators. The reporting system for the Malakal project was adjusted to hospital outcomes and was not adapted to monitor DMC development.⁵²

The comparison of the implementation scale with the strategic considerations from the annual plans shows that the ambitions for expansion of the coverage area and additional activities did not materialise (*Annex 6.4: Annual DMC strategy implementation*). Financial constraints and the reduction of resources were the main reasons provided to evaluators. The lack of measurable indicators and the small target groups have led some people in operations in Barcelona to conclude that DMC is not functioning, as voiced during interviews. No costing of Malakal DMC has been carried out. The belief in operations that DMC is very expensive was not substantiated by some of the interviewees who argued that community interventions have proven to be less expensive than facility-based interventions. A lack of prioritisation of DMC is often cited as a constraining factor to fully develop this project in Malakal.⁵³

Main morbidity in the community sites

The components, which function well according to programme implementers and communities are malaria, kala azar and referrals of complicated cases. These activities have already saved many lives, as reported in interviews. The weak components according to respondents are ARTIs and acute watery diarrhoea in adults.

Trends in community-based consultations reflect the programme set-up: registered consultations in the community show an increasing trend since the beginning of 2018 (*See figure 1 and figure 3*). This could be linked with the increase of CHW sites during this period: the re-opening of Guel Achel and opening of Atiabtiab. The sites with the highest referrals in GelAchol, Atieptiep and Denshuck (*See figure 4*) correspond to the sites with high consultation numbers, with the exception of Denshuck. (*See figure 8 in Annex: 6.5*) Either this area has a greater number of sick people, or the referral criteria are not well applied in the site.⁵⁴

The main morbidities registered in CHW sites were uncomplicated malaria, ARTIs and uncomplicated diarrhoea. Uncomplicated SAM and kala azar were also reported. No particular epidemiological patterns were noted but the data were available for a short period only (*See figure 1 below*). The number of consultations at the community level is underestimated, as the CHWs don't register follow-up consultations.⁵⁵

⁵¹ Source: multiple interviews. Especially mentioned IMC and Unicef in Malakal.

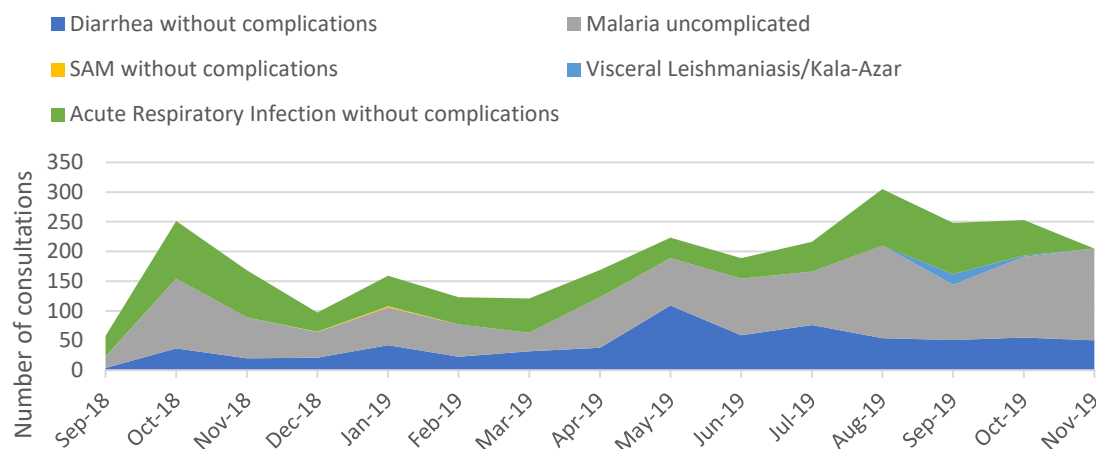
⁵² Annual Plans and Annual reports: 2017-2020

⁵³ Interviews, reports. Well corroborated.

⁵⁴ In fact, both of these assumptions can be true. The newly recruited CHW (June 2019) in this site was never trained by MSF.

⁵⁵ Interviews and observation.

Figure 1: Number of CHW consultations per type of morbidity by month, Malakal project, Sept. 2018-Nov. 2019



Data on community mortality was not available.

3.3.3 Changes in access to healthcare

The coverage indicators show that access to DMC is still low. The Akoka area has better accessibility than Baliet. Considering the outdated population figures (which should be higher⁵⁶) the real coverage must be lower.

Despite the perception that access to healthcare has improved for the villages with DMC coverage, limitations remain. Access during the rainy season is particularly challenging, as some areas are only accessible by boat and many other villages remain isolated and surrounded by swamps. The number of villages covered by DMC is small and the referrals system is limited to emergency cases. Most cases referred by CHWs must be transported by foot, distances are long and many never reach the PHCU/PHCC. Interviewees consistently reported that drugs are frequently out of stock⁵⁷.

Data for 2019 reveal that availability coverage in the community-based sites is below the minimum standard for the entire DMC programme and in both Akoka and Ballie, and only one CHW per 2,010 inhabitants available globally. The Akoka area was covered better than Baliet (see table 3 below). Both are lower than the standard of one CHW per 500-1,000 inhabitants recommended by MSF for DMC and for refugee situations.⁵⁸ The longer distances CHWs must travel in the open settings makes this availability gap even more significant. The availability coverage meets this minimum standard only for those villages where CHWs are located. Since these population figures are underestimated in at least three community sites (as discussed in the sections on Appropriateness), half of the villages where CHWs are located are also likely to have below MSF-standard coverage.

⁵⁶ Source: the reports and interviews.

⁵⁷ This information was triangulated with other sources.

⁵⁸ MSF. Refugee Health. An approach to emergency situations. 1997.

Table 3: Availability coverage by level of care and by area, MSF Malakal project, 2019

Location	Total target population	Level of care	Mean number of OPD/month	Availability coverage (number of people/ CHW)	Accessibility coverage (%)	Utilisation rate (No of consultation/inhab/year)
<i>Baliet axe</i>	3,325		516	2525	39	1.9
Adong	800	PHCC	408		24	6.1
Guel Achel	500	CHW	108	500	15	2.6
<i>Akoka axe</i>	12,700		898	1907	53	0.8
Rom	3,165	PHCC	514		25	1.9
Akoka		CHW			28	
Denchuk	495	CHW	47	495	4	1.1
Unakoch	690	CHW	60	690	5	1.0
Peldirawey	690	CHW	85	690	5	1.5
Wunpitch	690	CHW	51	690	5	0.9
Atabtiab	1,000	CHW	141	1000	8	1.7
<i>Total</i>	16,025		1414	2010	50	1.1

The accessibility coverage remains low globally: only 50% of the population has either a PHCC or a CHW within five kilometres from their homes. The accessibility coverage provided by PHCCs was comparable between the two areas, with 25% and 24% in Akoka and Baliet respectively. However, the accessibility coverage achieved by CHWs was higher in Akoka than in Baliet, with 28% and 15%, respectively. Thus, the global coverage was higher in Akoka than in Baliet, with 53% and 39% respectively.

The total utilisation rate (UR) or contact coverage, was 1.1 which corresponds to OCHA standards for health facilities: ≥ 1 new visit per person per year⁵⁹ but is lower than the MSF target indicator planned by the project: ≥ 2 new visit per person per year.⁶⁰ Conversely to accessibility coverage, the UR was higher in Baliet than in Akoka, with 1.9 and 0.8 consultation/inhabitant/year respectively. Only one CHW site, namely Wunpitch, had a utilisation rate less than one consultation/inhabitant/year (Table 1).

3.3.4 Changes in health-seeking behaviour

Significant changes in health-seeking behaviour (HSB) were mentioned by MSF staff and communities during the interviews and FGDs⁶¹. However, the absence of a comprehensive health promotion component limits the team's understanding of health beliefs in the area, and the scope of changes in HSB (more information in HP and CE section).

⁵⁹ Reference: <https://www.humanitarianresponse.info/applications/ir/indicator/h-c1>; accessed on 03.02.2020

⁶⁰ MSF South Sudan Annual report, 2018 year.

⁶¹ As there is no HSB study to be used as a baseline, the following findings must be taken as perceptions.

Perception of illness: Before DMC, the population was not able to recognise symptoms or distinguish diseases. A female participant in a FGD explained that, “*We only knew that diseases can kill people, we didn’t know what disease was what*”. The case of malaria was brought up in FGDs: and its origin was not known. One female participant explained, “*I thought it was because of the change of weather. We didn’t know about malaria, only when drugs arrived, we learnt about it (...) If you had fever, you took some roots, it sometimes worked, sometime didn’t*”. CHWs are now able to test patients and provide treatment. Serious cases are referred to PHCCs and the population knows about the importance of using mosquito nets.⁶²

In the sphere of mental health, a small number of treatments can have a significant impact on health-seeking behaviour. A recent example of a women suffering psychosis illustrates this: she was initially excluded by her community and lived in the forest. Traditional healing methods failed to cure her, and she was then referred to Malakal by the DMC team for psychiatric treatment. According to the CHW, her subsequent recovery had a big impact in the community and “*MSF is now considered the best healer.*”

First therapy of choice and the presence of CHW in the village: CHWs are generally appreciated and usually the community’s first therapy of choice. In one FGD with men, the work of the CHW was praised: “*The CHW is known here. He has drugs against malaria or helps with the referrals. He is really working with us. We feel free to speak with him about medical problems.*” However, during interviews the community raised concerns about frequent problems with medical supplies (see community perceptions of DMC programme) and the limitations of the CHW treatment package.

Free referrals for emergency cases and access to treatment in Malakal hospital provided by MSF was often mentioned as a major change, with a member of the DMC team surmising: “*MSF referral system has facilitated access to the hospital for emergencies to most members of the community that were not able to afford it.*” (see detailed information on referrals in section 3.4.5 Referrals) CHW identification and referral of kala azar patients to the PCHU in Adong was also mentioned as a major improvement in access.

However, most referrals are by foot and the long distances delay the choice to seek healthcare in the PHCU and the hospital.

Changes in preventive practices: during FGDs with the community, some participants knew about the importance of the hygiene, clean water and protection from mosquitos and flies. Therefore, they also demanded the means which would allow them to protect themselves such as access to clean water, soaps and water utensils, mosquito nets, and vaccination for their children.

“Before, some people first went to traditional healers. If that failed, they would call us when very sick. Now they are putting MSF first as they realised it is better. Now in most villages they change and MSF is the first option.”
CHW

Alternative choices for healthcare: although there has been a change in HSB pathways, other treatment choices including traditional healers, TBAs and home remedies are still relevant.

TBA: Women still deliver at home with the help of TBAs as there is often no other option because of the lack of access to health facilities. Nevertheless, the presence of CHWs facilitates the identification of risk pregnancies and referrals to PHCCs and Malakal. Female participants in FGDs were aware of the advantages of a hospital delivery, but long distances and lack of facilities remain a hinderance. In Gel Achel (Baliet) the closest facility is Adong PHCC, which is one day’s walking distance. In the Akoka area, the HPCU in Rom is two to three hours away and has only one bed. In

⁶² Very scarce.

emergency cases, the community sometimes carry women on stretchers. One CHW explained: *“TBAs are in charge of deliveries. As a reward, patients give them soap, money and crockery. If they have a difficult case, they come to me, I call the nurse in Rom and people carry her. It is a two hours trip”*. CHWs are sometimes able to identify risk cases in advance and refer them to Malakal. Regarding ANC, treatment is not always available, but some women mentioned they went to Rom PHCC as they were given incentives such as soap.

Traditional healers: Traditional healers seem to be slowly disappearing. The Christian churches played an important role preaching against them and advocating for biomedicine. One CHW explained how it has become an option only for the elderly: *“They are not many (traditional healers), many died during the conflict, others are very old. Their children didn’t follow the tradition (...) Only the elders, 45 years old and above, still go to traditional healers. Younger people don’t go, they are now Christians from the South Sudan Church⁶³ or other Christian churches”*. Nevertheless, in remote isolated villages, where other options are not available, people still seek help by visiting traditional healers. CHWs mentioned that sometimes they have to attend severe cases of people who went to seek care from traditional healers. CHWs are advising people to *“first try with modern medicine, and if it doesn’t work you can go to the traditional healers”*. MSF has not made any effort to engage traditional healers for referrals.

Home remedies: Home remedies remain an option, particularly for ailments not treated by CHWs like coughs and fevers (if the malaria test is negative and paracetamol is ineffective). In those cases, communities opt first for traditional remedies such as hot water, roots and herbs. Self-medication with modern medicine was not mentioned, as drugs don’t seem to be available in villages after the latest conflict.

3.3.5 Community perceptions on DMC related services

The scope of the data gathered on perceptions during the evaluation is not enough to accurately measure community perceptions, but some interesting elements arose during the interviews and FGDs.

Before DMC, people’s healthcare choices were limited to self-treatment, traditional healers, TBAs and a few partially functioning PHCs (mostly operating without drugs). Few patients were able to reach the hospital in Malakal due to financial, security and geographic constraints. A participant in a FGD recalled: *“Before MSF, if you didn’t have money, you could lose your life”*.

MSF OCBA’s DMC programme has brought free basic curative and limited preventive packages to isolated populations, facilitated referrals for the most serious cases and enabled the treatment of kala azar patients. A participant mentioned in a FGD: *“With MSF we have a better access to health. We have a car and a boat for referrals, treatment for simple malaria, kala azar and TB. Now we don’t need to walk many hours to Olang PHCU, we have free treatment here, it is safer for us...my community was suffering; now people are more comfortable.”*

Positive perceptions:

The community appreciated MSF efforts and staff commitment to provide medical care, overcoming geographic challenges. In various FGDs, community male members mentioned; *“Big thanks to MSF, they have changed our lives”*; *“MSF is the only one helping with malaria and other simple diseases”*.

⁶³ It seems that there are no religious healing systems in place, as interviewees did not mention despite the evaluators asking them.

Malaria and kala azar were the two diseases that were most mentioned in the discussions. MSF referrals, particularly those by boat during the rainy season, were specifically appreciated. Female participants in FGDs added that DMC has improved their safety, *“we don’t need to walk, it is not good for women to be on the road, not safe”*.

The community was happy with the CHW work and level of commitment. The positive perception was confirmed by CHWs. DMC patients interviewed in Malakal PoC and town hospital were happy with the treatment they received. The good system of counter referrals was also mentioned, as were nurses at PHCCs.

However, according to the information collected in FGDs, the level of knowledge of MSF varied. MSF was generally well known to men *“MSF it’s an INGO”; “We know well MSF, they work were other actors are not operative”; “MSF doesn’t tell lies, other NGOs promise a lot but they don’t give”*. It is less well known to women, with one patient mentioning, *“I don’t know anything about MSF, but I think they are doing very good work”*.

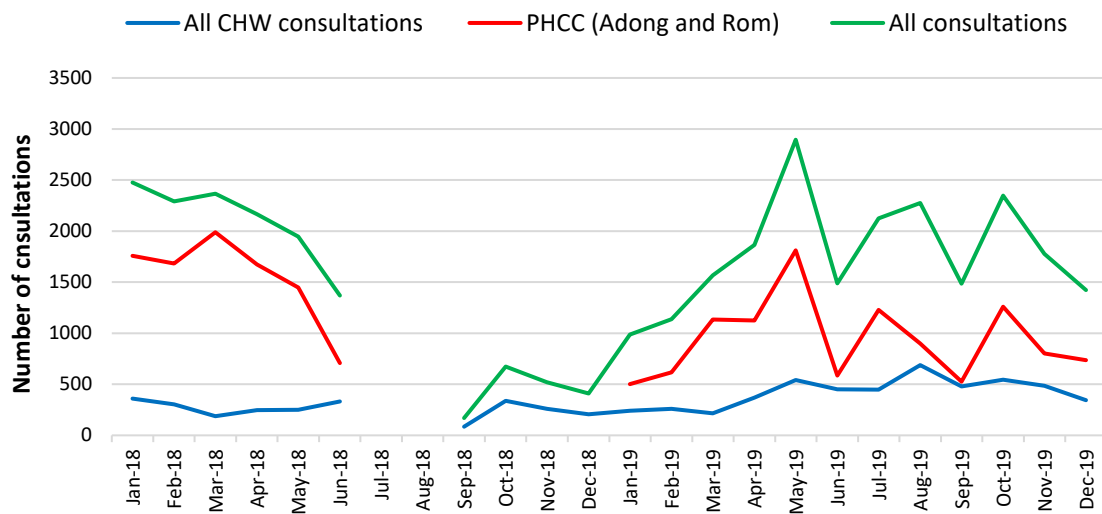
Perceived gaps and recommendations

The FGDs and interviews gave the community the opportunity to give feedback, raise issues and provide recommendations to improve the effectiveness of the DMC programme. Participants mentioned the issue of drug shortages and stockouts in health centres – particularly during the rainy season – and the lack of training for CHWs to spot other diseases outside of their remit, specifically ARTI. Participants also recommended an increase in health education in the community, distribution of mosquito nets to prevent malaria and kala azar, and provision of water purification tablets as people mentioned that drinking stagnant water was an issue during the dry season. Further points were raised regarding extra support to villages for referrals to higher level care, particularly during the rainy season, with the suggestion of providing a canoe in some hard-to-reach areas. Finally, the women interviewed requested that TBAs, ANC, diarrhoea, respiratory diseases, treatment for malnutrition and vaccinations were included in the CHW package.

3.3.6 Consequences for higher levels of care

Consultation trends in the communities and PHCCs suggest that increasing DMC activities correlates with the reducing burden on medical facilities. Although the mean number of consultations per month was higher for the two PHCCs (1,110) than for the six CHWs (347) the difference decreases over time: cumulative community consultations increase and in contrast, cumulative facility-based consultations decrease. The total consultation amount stays relatively unchanged over time. An average of 72 consultations per month per CHW was reported over the two-year period, increasing over time to more than 90 consultations per CHW in October 2019. *See figure 3 below.*

Figure 3: Number of consultations by level of care and by month, MSF Malakal project, 2018-2019
Notes: data for July-Aug 2018 for CHW and for Jun-Dec 2018 for PHCC were not available.

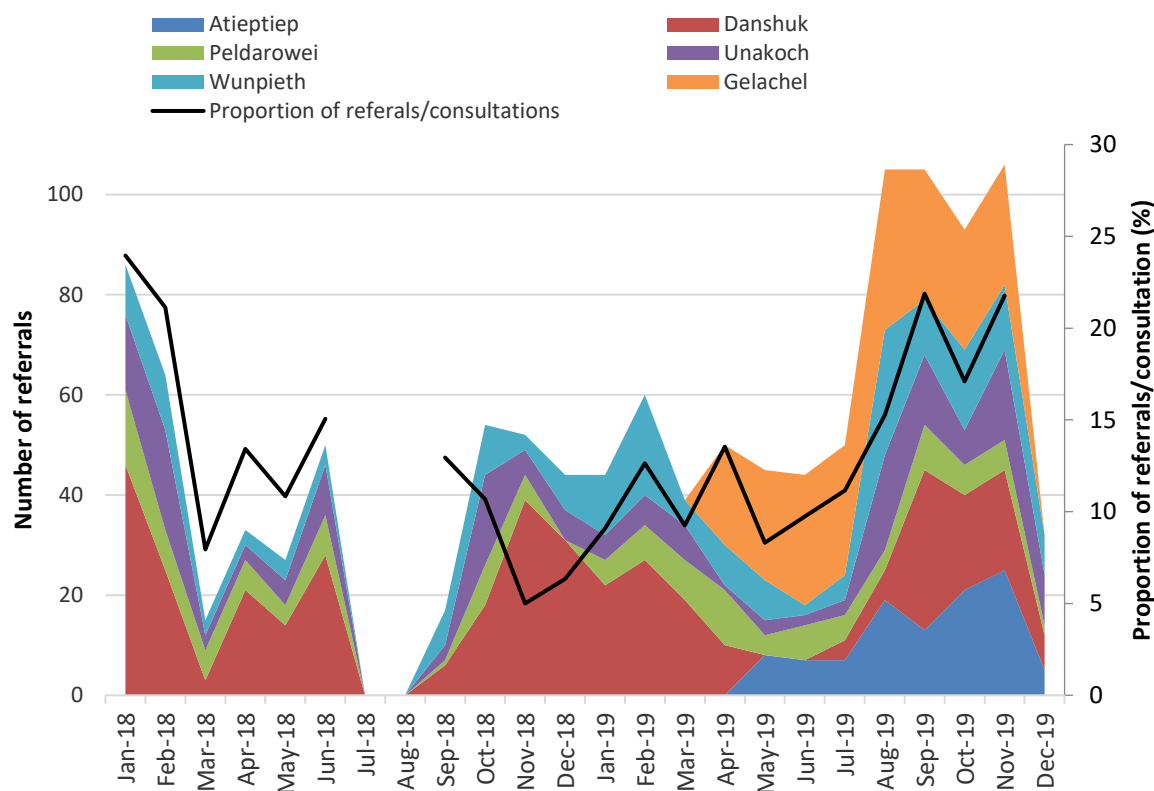


There are several potential reasons explaining the increased numbers of PHCC consultations. First, after stopping ATBs in the community sites, the CHWs had to send all respiratory infections to facilities. Second, people living far away and other NGOs started to use MSF as a referral channel. Third, the lack of training on referral criteria for the CHWs that joined later could have also led to this increase.

Referrals from CHWs to PHCCs increased as the total number of consultations carried out in the community rose. The number of average referrals from CHWs to PHCC was 55 per month, over the 2018-2019 period. The monthly referral number varied from a minimum of 15 in March 2018 to 106 in November 2019. The proportion of referrals increased in parallel to the number of consultations. The average proportion of referrals after consultations was 17%, increasing from 7.9% in March 2018 to 23% in February 2019. *See figure 4 below.*

Figure 4: Number of referrals to PHCC per CHW site by month, Malakal project, 2018- 2019

Notes: data for Jul-Aug 2018 for all sites, and for Jan-Apr 2019 for Gelachel and Wunpieth were not available

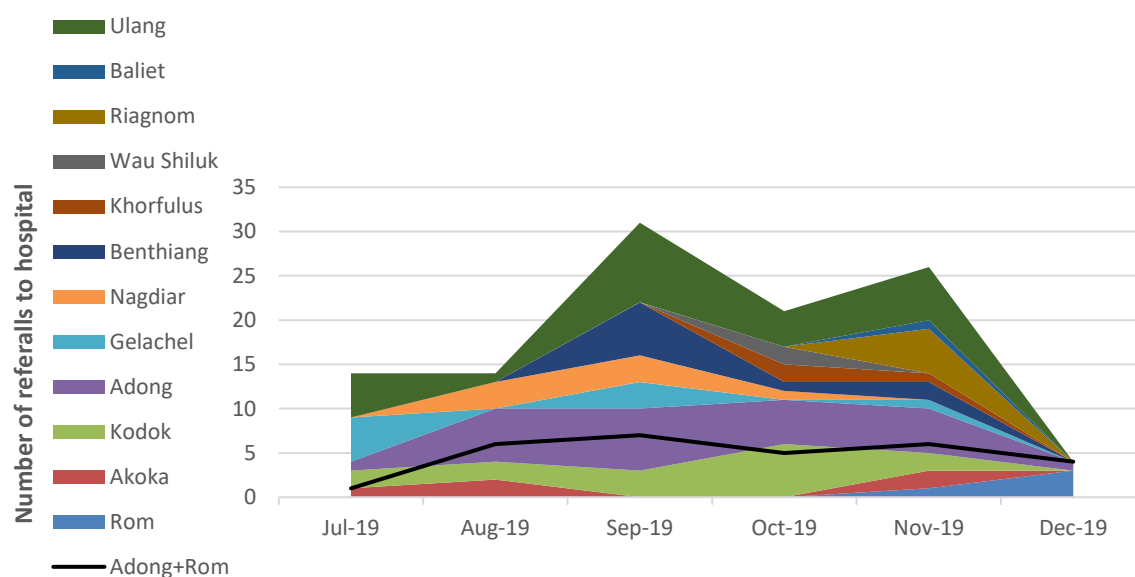


Medical personnel reported that more relevant patients come to the PHCCs from the community than before the start of the DMC programme (i.e. fewer very sick patients, or patients with minor problems, as assessed by PHCC and DMC medical staff). More patients are arriving to the PHCCs in a better condition and at earlier stage of disease, which is made possible by MSF’s community-based activities. On the other hand, simple malaria cases are no longer admitted as they are treated in the community. Data at PHCC level did not include disease severity or adherence to referral criteria, excluding the possibility to assess the relevance of referrals.

The monthly average of referrals from all PHCCs/PHCUs in the area is 18 patients per month (from July 2019 to December 2019).⁶⁴ Among them, 4.8 patients a month were referred from the supported PHCCs in Rom and Adong. All registered referrals from PHCCs were admitted at Malakal hospitals. Adong PHCC has a lot more referrals than Rom PHCC, as the latter is not accessible during the rainy season (June – November). See figure 5 below.

⁶⁴ Due to the transportation provided by MSF the referrals from PHCCs equal to the admissions.

Figure 5: Number of referrals to hospitals per PHCC by month, Malakal project, 2019



The mean number of admissions between 2016 and 2019 was 1,481 for Malakal PoC hospital and 1,610 for Malakal Town.⁶⁵ These are the total admissions in the Malakal hospitals and it shows that the referrals from Adong and Rom are only a small portion of the total admissions.

Globally, the proportion of admissions that come from Adong and Rom referrals is very low (as they serve small communities). Therefore, the evaluators cannot draw a tangible effect of DMC on the hospital level. Coverage would need to dramatically increase in order to sense the effect of DMC on the hospital. This is applicable to both expected reduction in mortality and in the reduction of resources needed at hospital level. The perception from the medical staff in the hospital, is that the severity of patients referred from the peripheries (PHCCs and communities) has decreased compared to two or three years ago.

Hospital admissions for Malakal PoC and town and the analysis of hospital data are provided in the figures 6, 7, 8 in *Annex 6.5*.

3.3.7 Effectiveness of specific DMC components

CHWs recruitment, training, and motivation

As documentation of the recruitment process was not available during the evaluation, the source of information is interviews with CHWs, outreach staff and communities. Based on these, the recruitment process seems to have been consistent over time in trying to ensure community participation and a fair selection process. Communities expressed satisfaction about the degree of their involvement in the process, as well as with CHWs' work.

The level that counterparts from the community participated in the recruitment process has varied. In some cases, the recruitment was informed by a village assembly, while on other occasions only the chief and elders were engaged. In most cases, the chief seems to have selected the candidates;

⁶⁵ The two hospitals are not far from each other and partially share the target population, but there are access problems for some tribes in one or another.

in one case it was the leader of the Boma⁶⁶ as per the recommendation of the PHCC. MSF's main criteria for recruitment (to live in the village, to have a good reputation, to be literate, to speak English and, if possible, to have previous medical experience) were well accepted by the communities. In most cases, the final selection was carried out by MSF according to test results. All six CHWs are men and most of them have some previous experience, either medical or from another NGO.

CHW Trainings: The CHW training curriculum and its duration varied over time, but always combined theory and practice. In general, the CHWs are happy with the trainings but those who were recruited later had either shorter courses or no training at all. There is no system in place to assess the skills of the CHWs.

According to the information collected from interviews and existing documentation, the first CHWs recruited in 2017 received a very comprehensive training⁶⁷ in Rom PHCC, Akoka PHCC and in Malakal, covering diarrhoea, coughing, kala azar, malnutrition, TB, pregnancy risks and hygiene.

Training of the CHWs recruited later lasted from one to two weeks, and the practice week took place in Rom PHCU. However, the last CHW to join the team in mid-2019, didn't receive any training at all as they were recruited during the rainy season.

Refreshment courses were conducted in April and September 2018. All CHWs interviewed pointed out that they didn't have any refresher course in 2019 and requested further training to improve their skills. On the other hand, effective on-the-job coaching by the clinical officers was observed during the field visit. A new refreshment course is planned for early 2020. The main gaps mentioned to the evaluators by the DMC team and the nurses at the PHCCs, to include in the curriculum, are: the prioritisation of patients and triage, emergency referrals, identification of kala azar patients, dosage, differences between viral and bacterial ARTI, ANC basic care package, maternal care, health promotion and first aid.

The absence of pre and post-test made difficult to evaluate the exact increase in CHW knowledge. Measuring the skills of the CHWs by following the quality and pertinence of the referrals from the community to the PHCC was not carried out.

UNICEF has recently developed training modules for the CHWs working for the BHI, but MSF has not yet reviewed this material.

CHWs are happy with their work and very motivated and are well accepted and respected by their communities. However, there is a general perception among CHWs that MSF doesn't respond to them appropriately as there are some pending requests that have never received a formal reply. One example given was some of the first CHWs signed MSF contracts but they were not renewed because it was later decided that CHWs were not MSF staff. Unfortunately, this was never clarified with the CHWs. Others cited the request to raise their incentives (which currently stand at 190 USD per month) since the start of the CHWs' engagement.⁶⁸

⁶⁶ Boma is the lower administrative level and consist of a group of villages.

⁶⁷ According to CHW recruited in 2017 the duration of the training was 1 week in PHCC and 2 weeks in Malakal Hospital

⁶⁸ In comparison, BHI gives 25 USD to CHWs which is topped up by UNICEF with incentives.

Referral and counter-referral system

The following referral pathway works quite well and ensures a continuum of care:

CHW → PHCU/PHCC → Hospital (Town or POC)

During the dry season, MSF OCBA provides referrals by car and during the rainy season the MSF “river ambulance” is the only means of providing access to hospital. However, the high cost of referrals has raised questions in MSF around the cost effectiveness of the DMC project.⁶⁹

The community referral system is the weakest in the referral pathway, as MSF only takes responsibility for PHCC to Malakal. There is an opportunity to provide referrals during the dry season through the DMC

regular supervision activities, when patients could be assessed by the MSF team. During the rainy season, most villages are surrounded by swamps and distances are long. In some cases, the community might carry patients by foot or transport them by canoe if they are seriously ill.

Distance travelled by DMC KA patients interviewed in Adong PHCC

1. Women with brother from Malwan
12 hours by foot
2. Men with daughter from Whuntaw
10 hours by foot
3. Women with daughter from Achwil,
by canoe provided by chief, 12 hours
4. Women with baby from Malwan 12
hours by foot.

In a FGD, one woman explained: “*My mother was referred and nobody wanted to carry her*”. One CHW explained: “*I ask the community to carry patients to Rom, but it doesn’t always happen. This was the case of pregnant women with malaria during the rainy season*”....“*I requested MSF to help providing a canoe, but they refused*”. According to CHWs, about 50% of referrals don’t reach the PHCC. The need to support referrals from the community and identify alternative modes of transport was detected in the project revision in February 2018 and recommended by the DMC advisor during his visit in October that same year, but so far no action has been taken.

Another issue is the pertinence of referrals by CHWs in the villages⁷⁰ and nurses in the PHCCs. According to the DMC team, the proportion of correct referrals varies from 50% to 70% of cases. Referral criteria and procedures from the community to PHCCs and from PHCCs to hospitals are not well defined or followed. The team is already aware of the need to reinforce tools and procedures for increasing screening capacities on the ground, in order to avoid unnecessary trips, particularly by boat, which is very expensive. On the other hand, the capacity of the boat was pointed out as limited and sometimes the team had to leave patients behind.

Limited communication means (lack of mobile network or its unreliability) contributes to delays and compromises effective referrals. As the project medical referent has to validate all emergency referrals, this causes further delays.

Counter referrals from Malakal are working adequately: MSF provides transport after patients are discharged and takes them home (to villages often far away) during planned team movements to the project sites. During interviews and FGDs with the community (including former patients) the respondents were appreciative of the counter referrals. These are particularly relevant because of the long distances people have to travel and the lack of public transportation.

MSF is the main actor conducting referrals in the Akoka and Baliet areas. Other NGOs, such as ICRC, IMC, World Vision and DRC turn to MSF for help, particularly during the rainy season. Other actors

⁶⁹ According to data collected from the field visits (DMC advisor 2018-19) the total costs of the community activities is around 6-8% of the total annual budget of the project (data from Batangafo, CAR and Kalehe, DRC projects).

⁷⁰ Main referrals from CHW to PHCC are of KA, HIV, TB, complicated Malaria, Risk pregnancies, Pneumonia, Pregnant women for ANC, Anaemia, Complicated cough, infected wounds.

(ICRC, IMC) also have boats, but MSF efforts to coordinate referrals with them have been limited. Reasons for this include the fact that the NGOs have limited funds and restrictive referral criteria.

Data collection and surveillance system

Establishing an effective health surveillance system was a main objective of the DMC programme from the start. In order to ensure a quick response to medical humanitarian emergencies, MSF aimed to strengthen its knowledge of outbreaks, mortality and morbidity, population movements etc. The responsibilities of the CHWs included⁷¹:

- Bi-weekly reporting to MSF on all the diseases under surveillance.
- Monitoring of mortality in the community.
- Reporting of any displacement of population.

An active surveillance system was never set up in Malakal DMC. The data are passively collected by CHWs who work mostly in *tukuls* to receive patients. With only one CHW onsite without additional HR (like HPs and or TBAs), active surveillance cannot realistically be established.

The data collection system is not optimally set up, despite the efforts made in this direction. The CHWs use tally sheets and registration books to record morbidity. Information on the follow up of cases is not reported, which leads to underestimation of the overall workload. The consultations are registered either as a first consultation or a referral. A constraint to supervision is that the DMC team can visit the villages in the Akoka area only during the dry season. In the rainy season, these villages are isolated by swamps and are not accessible. The data collection is carried out in the communities and the data are given to the supervisor on the riverside the day of supervision, restocking and payment.

The biggest loophole is the lack of reporting on the stockouts of medical supply – there is no system in place to report consumption or request drugs before they run out. This leads to frequent stockouts.

Community engagement and health promotion

There is a general agreement among the MSF staff interviewed, that there is a need for a health promotion and community engagement component in the DMC package. A former medical coordinator said: *“Health promotion was a missed opportunity”*.

There are no HP or CE strategies in place and no human resources allocated, with expertise to develop them. Only the mobile clinics had one health promoter in charge of passing general messages. HP is now under direct responsibility of the NAM Periphery. At country level, there is one HP manager covering three projects, but in practice he mainly focuses on Yambio project. This gap was already identified by the DMC advisor during his visit in 2018. He recommended *“hiring and training a certain number of HP and including them in the DMC activities”*.

“The CHWs explained about health promotion. E.g. that mosquito can cause malaria and children and pregnant should be protected. But how can we do that when we do not have mosquito nets? He also explained about clean water, but we do not have clean water”.

Female in FGD

Some HP material has been developed initially and basic notions of HP were included in most of the CHW trainings but the CHWs⁷² do not have enough time, expertise, materials, or supervision. During FGDs, some participants mentioned the need to wash hands, keep houses clean and use mosquito nets. Women showed interest in learning how to keep their children healthy to avoid

⁷¹ DECENTRALIZED MODEL OF CARE / COMMUNITY LIAISON JOB PROFILE. 2016

⁷² One CHW had Health promotion experience with Oxfam.

diarrhoea. In general, the level of knowledge was limited. As already mentioned in the section on community participation, there is no strategy and no activities in place for CE.

Main enabling factors

Internal MSF	External
Engaged management teams that have a vision and dedication to DMC.	Minimal security issues to allow the movement of people and MSF staff
Presence of DMC technical support staff.	Presence of transportation infrastructure: roads, rivers etc.
MSF international staff with previous experience/knowledge of DMC from other MSF projects.	Presence of the primary and secondary healthcare facilities for referrals and continuum of care.
Motivated South Sudanese staff interested in supporting disadvantaged people in their country.	Availability of transportation means like donkey-carts, canoes, people who can carry.
Motivated CHWs who are interested in building their skills.	Ministry of Health staff who are interested in community-based approaches and have similar programmes. Good for continuity.
Availability of community members who meet the minimum selection criteria to be recruited and trained as CHWs.	
Participation of the community in the recruitment process of CHWs.	
Engaged community that provides <i>tukuls</i> for CHWs or a school building for consultation purposes.	
Availability of transportation like boats, cars, fuel etc.	

Main disabling factors

Internal MSF	External
MSF management staff scepticism towards DMC as an effective model for tackling access to healthcare	Limited accessibility to communities (swamps, lack of roads), big distances and long travel times.
Overt focus on sheer numbers to assess DMC outcomes.	Insecure context (roadblocks, presence of militia).
Budget constraints.	Scattered populations, frequent population movements.
Tasking the DMC managers with activities unrelated to DMC out of their job description.	
Lack of regular assessments and updates to the design according to the needs; outdated population figures.	
Lack of clear DMC strategy with the appropriate monitoring mechanisms and criteria; lack of appropriate adjustments in the strategy.	
Lack of HR resources to cover the community work (CHWs, TBAs, health promoters), and management and supervision.	
Gaps in medical supplies at the community sites due to weak monitoring and supply system.	
Lack of health promotion and community engagement components.	
High cost of boat trips used for supervision and referrals.	
Lack of communication means to connect with DMC sites.	
Lack of coordination with BHI.	
Failure to expand the target population and service packages over time.	
The absence of a referral system from the communities/CHWs to the PHCC/CUs.	

4 Conclusion and discussion

In 2016, during a period of relative stability, the MSF OCBA team ran a big hospital project inside Malakal's UNMISS PoC compound and was in the process of launching a second hospital project in Malakal town. DMC activities in Malakal project commenced in June 2017 and covered a population of around 12,000 along the Akoka and Baliet roads, reaching small community sites of 4,600 people.

Relevance

The Malakal DMC project was timely and relevant to the population needs and contextual factors, but the design was compromised by the small size of the assessed communities and small number of CHWs per population (i.e. only six for all DMC activities in 2019). A period of relative calm prompted the return of the previously displaced civilian population to Malakal's periphery, but healthcare infrastructure was not sufficient to support them. The MSF field team was keen to 'go out of the hospital walls' and possessed experience implementing similar projects. An increase in support for community-based approaches within MSF OCBA ensured political and technical buy-in. These factors created a supportive environment for DMC, despite the remaining security constraints and hesitation of some people in MSF to prioritise DMC.

The DMC proposals for 2016 and 2017 did not specify the prevalence of the needs in the area. Still, they identified a total lack of access to healthcare for the assessed populations. Therefore, the choice to focus on the three main killer diseases known to have the biggest impact in South Sudan (malaria, pneumonia and diarrhoea) seems relevant. Kala azar was known to be prevalent in the area based on the referral cases in the hospitals and malnutrition could be relevant given the population consisted of new settlers. The needs assessments began in 2016, only assessed small communities and were poorly documented.

Appropriateness

The initial implementation strategy was only partially appropriate. It rightly employed the community and facility-based decentralised approaches, alongside a referral system to ensure continuum of care for the excluded communities. However, while addressing the small communities it underestimated the human resources needed.

Adaptations in the approach to match the enhanced understanding of the situation were insufficient. A few appropriate adaptations to the context included the support to the Rom PHCC with kala azar drugs; adding mental health to the DMC package; the cancellation of ATB provision in the community; and the closure of mobile clinics. However, the project could not ensure regular re-assessment of the intervention areas and failed to increase the coverage and services in accordance with the needs, despite repeated proposals elaborated in the field.

The main uncovered needs according to the prior field proposals and the evidence produced by the evaluation field visit, are maternal health and preventive measures (mosquito nets, WatSan, vaccination) as well as health promotion and community engagement (HP/CE).

At the start of the DMC intervention, the emergency context limited the possibility to ensure community participation in the programme design. However, the level of community participation has remained low, despite being a key activity of the DMC approach.

MSF OCBA's DMC project is well aligned with the South Sudanese MoH Boma Health Initiative (BHI) which aims to provide a comprehensive community-based package and is in the early implementation phase in Malakal.

Effectiveness

The shortcomings of the DMC implementation process included the improper planning, preparation and prioritisation; the reduction of programme components and delays; and the lack of collaboration and exchange within the MSF movement and with relevant external stakeholders. Altogether, this resulted in fewer functional community sites than were envisaged by the initial proposal and annual plans. There was also a lack of collaboration and exchange with the international and national actors involved in healthcare provision and community-based projects.

The lack of a coherent DMC implementation plan with specific, relevant and measurable objectives, together with an unreliable data collection and reporting system, made it difficult to document and present the achievement of the specific objectives. Tangible impact is difficult to measure given the small scale of the intervention. The principle morbidities treated by CHWs are uncomplicated malaria, ARTIs and acute watery diarrhoea.

Currently, ARTI management in the DMC package covers minimum care and referrals. However, both BHI and MSF OCA provide ATB for ARTI in the community, carried out CHWs. Consultations trends and referrals from the community to health facilities reflect the development of the programme. Overall, consultations in the community show an increasing trend since September 2018, which is explained by the newly opened community sites. The CHW sites with highest consultations also generally have the highest referrals.

Access to DMC health services for the target population is still low, as reflected by the coverage indicators. The Akoka area has better accessibility than Baliét. Considering the underestimated population figures, the real coverage is expected to be even lower than the available figures. Health coverage is still perceived as limited, despite the population acknowledging improved access to healthcare, especially regarding malaria, diarrhoea in children, kala azar and referrals of severe cases.

The increase in community consultations coincides with the decrease in consultations in the PHCCs, suggesting that strengthening DMC lessens the workload in the PHC facilities. The perception at the PHCC level is that DMC has a positive impact on their work through relevant referrals and decreased patient severity over time. Due to the small amount of admissions coming from the supported PHCCs, no tangible effect of DMC at the hospital level can be measured, neither in terms of mortality or workload.

The project has altered health-seeking behaviour in the community and encouraged people to seek CHWs and biomedical healthcare first. Although biomedical healthcare is now the community's first therapy of choice, for some conditions - including deliveries - lack of access means people still rely on traditional medicine. MSF has not made any effort to engage traditional healers for referrals.

Across different respondent groups, people believe that MSF referrals have facilitated access to hospital care for excluded patients and by doing so, has saved lives. The weakest link in the referral pathway is referral from community to PHCCs. Referral criteria and procedures from the community and PHCCs to higher levels of care are not well defined or followed.

Data collection and surveillance systems has not worked properly, which has led to underreporting of workload and stockouts of medical supply.

MSF has tried to ensure community participation in the recruitment of the CHWs, and this has been instrumental in achieving a high level of acceptance. However, the recruitment processes were not

consistent and wider community participation, beyond the community leaders, was not pursued. The criteria of gender equity in recruitment were not introduced.

The CHW training curriculum and its duration varied over time, but the CHWs that were selected later, did not receive as comprehensive trainings as those recruited earlier, with one reporting not to have been trained at all. CHWs are generally happy with the initiation trainings and want MSF to start running the refresher courses that were stopped in 2019.

Failure to include health promotion and community engagement activities in the DMC project is one of the biggest gaps that limits the scope of preventive care. There are no HP staff in the DMC team and consequently no specific methodology, implementation plan and supervision systems have been developed. Community engagement has not been addressed at all.

From the community perspective, the DMC programme has improved access to healthcare. While the quality of care is generally satisfying at the community and referral health facility levels, the main perceived areas for improvement are preventive care, drug supply, maternal health, ARTIs and support to community referrals.

General analysis

Despite the relevance of DMC in the context, its implementation had a low level of effectiveness and appropriateness. This was mainly due to budget constraints and resistance to expand the programme at HQ, in the absence of hard data demonstrating impact.

This evaluation finds that the DMC project, despite its inappropriately small scale, has made positive changes for the community and in health facilities and has provided access to healthcare for people who would otherwise have none. By increasing its coverage and service package, DMC can achieve higher outcomes and optimise the use of resources, provided that the monitoring and reporting system is working effectively. This will require an investment of additional resources in the project, but the increase in impact will be significant.

5 Recommendations

For MSF OCBA headquarters:

- ⇒ **Finalise the community engagement and DMC toolkit, including training material for CHWs, and disseminate the documents to the field.**
- ⇒ **Develop the monitoring tools for DMC activities at project, coordination and cell level:**
 - Develop process, output and outcome indicators which allow the measurement of progress.
 - Finalise integration of DMC activities into HMIS.
- ⇒ **Create a mobile DMC implementation officer position to provide technical support to projects and country coordination team.**
- ⇒ **Clarify OCBA's position towards DMC and ensure the necessary support and resources for its implementation.**

For Malakal DMC – MSF OCBA South Sudan mission:

- ⇒ **Ensure adequate management tools and implementation process:**
 - Update the DMC strategy and create a log frame with a set of objectives, measurable indicators and chronogram.
 - Define an exit strategy, exploring the Boma initiative as an opportunity for handover.
 - Ensure regular needs assessments and adapt strategy accordingly.
 - Adapt strategy to seasons for areas with limited access during the rains.
 - Provide rapid feedback to long standing claims of the CHWs
- ⇒ **Increase the coverage and target population of the DMC. With the expansion costs the programme will reach significantly more people and optimise the use of resources (economy of scale):**
 - Update population numbers and mapping of Akoka and Baliet and allocate new CHW sites to increase coverage.
 - Implement a needs assessment according to the pending proposal, in order to cover the new areas and maximise the outcome on resources spent.
- ⇒ **Increase the package offered by community-based activities:**
 - Add new components to the community package: MRH, preventive services (malaria prevention, safe water, vaccination, prevention of STIs) corresponding to the workload and skills of the CHWs.
 - Consider the re-introduction of ATBs for ARTIs with thorough preparation, training of CHWs, assessment of skills, and supervision and referral mechanisms. Use creative ways of improving technical skills and simplifying diagnosis (e.g. for measuring respiratory rates).⁷³

⁷³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4451166/pdf/czu047.pdf> ; <https://maternova.net/products/charm-monitor-to-detect-child-pneumonia>

- ⇒ **Ensure budget and human resources for proper management and implementation of DMC:**
 - Plan and defend enough budget and human resources for a proper implementation of DMC.
 - Add additional community-level workers to each community site (e.g. TBAs) in order to share work with CHWs and improve gender balance.
 - Ensure the involvement of experienced managers in the community approach (NAM, PMR, Field Co, Medco, HoM)

- ⇒ **Ensure uninterrupted drug stocks for the CHWs** through a drug distribution system that is based on consumption and morbidity.

- ⇒ **Improve data collection, analysis and reporting, implement a proper surveillance system**

- ⇒ **Improve the information management system:** Make sure that the newcomers get the complete update and previous documents about the programme.

- ⇒ **Strengthen CHW training, supervision and monitoring:**
 - Implement CHW capacity development plan including:
 - Individual evaluation system and capacity development plan;
 - Regular supportive supervision, on-the-job trainings and refresher training for all lay people according to the identified gaps;
 - Practice in hospital and/or PHCC (include simulations, on-the-job training and stages in the hospital as a way of improving CHW skills);
 - Develop training curriculum for new lay positions;
 - Ensure enough staff for the supervision of all CHWs/TBAs;
 - Update the training curriculum with the available information: a) material developed for the DMC toolkit by the DMC advisor at headquarters; b) UNICEF new training material, developed for the Boma CHW⁷⁴ if validated by MSF referents.

- ⇒ **Ensure adequate health promotion and community participation:**
 - Develop a strategy and action plan for HP and CE. If there is no capacity at country level, consider a visit by the HP/CE advisor from HQ. A community perceptions study would help to improve the understanding of community perspectives and facilitate the design of an action plan.
 - Include a full time MSF HP in the DMC team.
 - Update and complete the existing HP material and distribute it to the CHWs.
 - Train the entire DMC team in HP and CE. Include HP in refresher trainings for CHWs.
 - Consider a KAP survey⁷⁵ or an HSB study to have a baseline and to identify factors influencing health-seeking behaviour, to monitor changes in attitudes and practices over time.
 - Set up a confidential institutional feedback system from communities to MSF, aligned with the Boma Initiative. This would also facilitate a future exit strategy.

- ⇒ **Collaboration and exchange of expertise:**
 - Establish regular experience sharing between the two DMC projects in MSF OCBA in South Sudan.
 - Exchange experiences with MSF OCA outreach programme to learn lessons.

⁷⁴ <https://drive.google.com/drive/folders/1k2HFBVmAoi3p3xAU3kUfCu2-em-GSdu9?usp=sharing>

⁷⁵ KAP stands for Knowledge, Attitudes and Practices , it is used as assessment and baseline in Health Promotion

- Coordinate with the Boma Initiative in Juba (national coordinator for MoH and UNICEF) and Malakal (UNICEF and its implementing partners for BHI).
- At Malakal level, coordinate with the non-governmental sector involved in the provision of primary and secondary healthcare.

⇒ **Strengthen the referral/counter-referral system as a key factor to success:**

- Ensure that effective referral criteria are implemented for PHCCs and CHWs. Assess and adjust the system every six months. Identification of emergencies should be a priority.
- Ensure an efficient referral system from community to PHCU with the engagement of the communities in them. The community referral system could be managed by a 'village health committee,' similar to the Boma Initiative model.
- Design different pathways for dry and rainy seasons;
- Explore alternative options for referrals during the dry season such as cars, donkeys, motorcycles, etc. by reaching agreements with their owners.
- During the rainy season, explore the possibility of providing canoes to the villages.
- Engage traditional healers and TBAs in referral pathways.
- Ensure communication means between CHWs and the nurses in PHCCs.
- Improve cost effectiveness of boat referrals. Train CHW and PHCC nurses in better triage of emergencies and referrals. Continue coordination efforts with other NGOs to share resources and cost.

6 Annex

6.1 Terms of reference

TERMS OF REFERENCE / 03.06.19

Evaluation of decentralized models of care in DRC, CAR and South Sudan

Commissioned by	DRC, CAR and SSD missions/cells
Commissioner	José Luis Dvorzak (DMC Advisor MSF OCBA)
Commissioned to	Vienna Evaluation Unit
Time period evaluated	2017 - 2019
Duration of evaluation	July – December 2019
Expected start date	July 2019
ToR elaborated by	José Luis Dvorzak, Cristian Casademont, Maitane Azkarraga, Liliana Palacios, José Mas, Sylvain Groulx, Mohamed Eltom, Mónica

1. CONTEXT

Decentralized models of care (DMC) depict the implementation of care outside of health facilities or outside of its usual facility, and closer to patients in order to make medical activities (curative and preventive) more accessible to those populations (*according to MSF OCBA SP 2014-2017*).

DMC can be divided in two main interventions:

- 1) Community based interventions: activities implemented by CHWs/TBAs in the community, they are members under incentives of those communities where the activities are implemented, the skills are mainly low and the number of activities should be limited to the skills.
- 2) Decentralized interventions: activities implemented in the community but originated in the facility, with MSF higher skilled staff. Includes “one shot” interventions, mobile clinics, vaccination campaigns in the community, etc.

This evaluation will focus on community-based interventions and decentralized interventions focusing on the implementation of activities close or inside the community rather than within a centralized medical facility. This approach is a transversal methodology meaning any activity that can be re-designed for a community setting, rather than a centralized setting, would fit the concept. For MSF, any decentralized approach can improve access to medical care, leading to our overall goal of reducing morbi-mortality.

The DMC strategy encompasses the designing and planning of activities including community-based interventions (with a community involvement at the core of the design) and decentralized interventions or both. The main objective of these community strategies is to improve access to healthcare of vulnerable populations (situation of conflict, violence, displacement, etc.) facing barriers to reach care in formal facilities. As these strategies must be adapted to the contexts, the specific particularities of each project must be taken into account and a new model needs to be created in every case tailored to this specific situation. The scope of options and variability of this strategy can include a broad spectrum of activities and these must be selected according to the needs of the populations identified by MSF.

The main component of this strategy is the community case management approach focusing on primary healthcare level activities with an emphasis on increasing access and quality of care at

community level as well as strengthening preventive measures, community knowledge and practices as well as community mobilization. In the community-based model networks of community workers (community health workers and traditional birth attendants) are chosen in villages outside of walking distance of a health facility. These workers are trained to provide treatment for specific diseases to people who cannot access formal health facilities and to identify alarm signs to be able to refer cases that cannot be treated by them. The community workers are trained and supported by a supervisor who reports to the local health facility.

The DMC strategy has been implemented by OCBA with this name for the first time in 2017 in Malakal project, South Sudan. In February 2017 it was implemented in Kabo and Batangafo projects in the Central African Republic (CAR). Before that, some similar interventions with these models were implemented. Since then several projects in different countries have implemented this strategy in both emergencies and regular projects. Currently, several DMC interventions have been approved to be implemented in many countries in 2019 or are in process of design/implementation (see Table 1).

Table 1. Description of countries and MSF OCBA projects with DMC interventions (on-going, closed and in the pipeline), 2017-2019.

N	Project	Country	Cell	Status
1	Malakal	South Sudan	5	Opened in 2017 (on-going)
2	Kabo	CAR	3	
3	Batangafo	CAR	3	
4	Ansongo	Mali	2	Opened in 2018 (on-going)
5	Kidal	Mali	2	
6	NW Cameroon	Cameroon	EU	
7	SW Cameroon	Cameroon	EU	
8	Alindao	CAR	3 (Eureca)	
9	Bocaranga	CAR	3 (Eureca)	Opened in 2018 (closing or closed)
10	Kalonge	DRC	3 (RUSK)	
11	Salamabila	DRC	3	
12	Yambio	South Sudan	5	Starting soon or pending approval in 2019
13	Ulang	South Sudan	5	
14	Al-Zuhra	Yemen	1	
15	Baidoa	Somalia	5	
16	Douenza	Mali	2	

As this strategy is relatively new in MSF OCBA and is becoming more relevant in medical operations, it is necessary to evaluate the activities that have already been implemented with the aim to learn how access to healthcare was modified and how the efficacy of the interventions can be improved. It is also crucial to better understand enablers and constraints of this strategy.

South Sudan, DRC and CAR are selected for the first DMC evaluation because these were the first countries where DMC strategies were designed and implemented. As enough time passed since the implementation of the first experiences and a considerable corpus of information was already collected about the projects, it is now time to compile and analyse this information in the form of an evaluation, with the aim of knowing if the initial goals of the strategy were achieved and to get a summary of lessons learned to be replicated in future interventions.

2. OVERALL OBJECTIVE and PURPOSE

OVERALL OBJECTIVE, PURPOSE and USE

Evaluate the community activities implemented in DRC, SSD and CAR with a particular focus on changes in access to healthcare, effects of DMC on higher levels of care (Hospital, PHCC), community perception of the DMC and specific aspects of DMC strategy (design, implementation, set-up).

MSF OCBA aims to derive lessons learned from DMC implementation in 3 contexts to improve the performance of community activities in the current and future interventions.

The results will be used both by operations and the medical department to inform the decision making in current and future DMC interventions.

SPECIFIC OBJECTIVES

- To evaluate the effect of the community strategy in terms of access to healthcare
- To evaluate the consequences of the strategy on the workload of the staff in the higher levels of care (Hospitals/PHCC)
- To evaluate the participation of the community in the planning (co-design) and implementation of DMC activities (ownership, acceptance, perception, perceived impact and benefits, etc.)
- To evaluate specific aspects of DMC interventions (design, implementation and set-up)
- To identify enabling and constraining factors during the implementation of DMC interventions for the improvement of the performance in current and future interventions

Out of scope

The revision of the global DMC strategy as such is out of scope of this evaluation.

3. KEY EVALUATION QUESTIONS

CASE STUDIES

1. Relevance

- How was the design of each DMC model informed by the identified needs and the context?

2. Appropriateness

- Were appropriate adaptations made in the approach with enhanced understanding of the situation?
- Did new health needs that have not been tackled arise throughout the period of the implementation?
- To what extent did the community participate in the process (co-design, planning, implementation)
- Are community-based activities aligned with or adapted to MoH/WHO community-based care policies

3. Effectiveness

- Were the DMC activities carried out as originally planned? To which extent the objectives have been achieved?
- Access: How the access to healthcare evolved after the implementation of DMC? How the communities in the catchment areas have modified their health seeking behaviour since the DMC approach started? Malaria data will be used as a proxy to evaluate the access (to check the hypothesis of increased number of malaria cases received at community and primary healthcare level and decreased case fatality rate of severe malaria in the hospital (especially less than 48 hours after admission))

- Consequences on higher levels of care: What consequences do the community-based interventions have on the activities at higher levels of care (Hospital/PHCC)? For example, in the quantity and quality of consultations done in the higher level facility.
- Perception: How are the DMC related services perceived by the communities?

TRANSVERSAL ANALYSIS

- What are the common enablers and challenges that can be extrapolated from the projects?

Commonalities and differences in:

- Community workers: Recruitment process, skills before and after training and task shifting
- Referral/counter-referral system
- Training and supervision activities
- Surveillance system/data collection
- Health promotion and community engagement activities
- Relationship of the DMC with higher levels of care

4. PROJECT REQUIREMENTS

- Ideally, having activities in the community with CHWs/TBAs/HPs-HEs and the members of the community
- Project has been open for a minimum of 1 year (and retrospective data is available)
- Expected duration: minimum of 1 to 2 years (to allow for follow-up post evaluation)

Projects proposed:

- South Sudan: Malakal project
- CAR and DRC: available projects to be confirmed

5. PRACTICAL IMPLEMENTATION OF THE EVALUATION AND GOVERNANCE

Number of evaluators	2	
Timing of the evaluation		
Required amount of time (days);	<i>Evaluator 1</i>	<i>Evaluator 2</i>
Inception Phase (Days)	15	15
Data collection Phase (Days)	45	45
Data collection from off-site & data collection in DRC, CAR and South Sudan		
Analysis and Reporting Phase	32	32
Analysis and development of case study reports and compiled report		
For presentation (Days)	2	2
Total time required (days)*	94	94

6. EXPECTED RESULTS and INTENDED USE OF THE EVALUATION

Phase 1: Inception Phase

In-depth inception report incl. spelled out data collection instruments (e.g. topic guides for interviews with MSF staff).

Requirement: Clearly depicted methodology to allow transversal application by different evaluators in three projects.

Phase 2: Case study phase

Presentations

- Presentation of evaluation plan for projects prior to visits
- Debriefings in each project/mission
- Virtual presentation to missions and projects where the evaluation has been conducted
- Presentation of findings to OCBA audience

Reports with findings and recommendations; general recommendations and mission/context specific recommendations

- Case study report CAR including integration of quantitative analysis of Malaria data endorsed by Commissioner and VEU
- Case study report DRC endorsed by Commissioner and VEU
- Case study report South Sudan endorsed by Commissioner and VEU

Phase 3:

Overall report with common findings and general recommendations on community activities designed to improve planning, implementation, performance of staff, monitoring and quality of care in decentralized community activities in OCBA projects

- Based on the transversal analysis: Concrete proposal of a document for improving the performance of OCBA in the implementation of community activities

Presentations:

- A presentation of the final report will be done at HQ in Barcelona
- Presentation at the HoM/MedCO week 2020

INTENDED USE

OPERATIONS AND MEDICAL DEPARTMENT

1. Medical department to develop appropriate tools
2. Operations department to commit to implementation of tools and recommendations in future DMC interventions

7. TOOLS AND METHODOLOGY PROPOSED

- Review and analysis of project documents
- Interviews with key-team members at HQ and field levels
- Interviews, focus group discussions with MSF-CHWs/TBAs/HP-HE, health centre/health post staff and hospital staff

- Interviews with key informants (e.g. health professionals from MoH or from the facilities, community gatekeepers)
- Interviews, focus group discussions with patients/former patients
- Observations
- Examination of files and registers
- Quantitative and qualitative data gathering and analysis

8. DOCUMENTATION FOR READING

- Project documents (logframes, situation reports)
- Medical reports (in the facility)
- Guidelines
- Data files
- DMC relevant documents

9. STAKEHOLDERS AND INTERVIEWEES

KEY STAKEHOLDERS

- Dir Ops, Cell 3, Cell 5, Cristian Casademont (MedOps); José Luis Dvorzak (DMC referent)
- Other stakeholders: Operations: HoM, MedCos, PMRs; FieldCos, staff in field; Medical department; Other members of medical department; Beneficiaries

INTERVIEWEES

- CHWs/TBAs/MW/Nurses/COs/Hos/doctors/staff in the field, capital level and HQs
- Beneficiaries in the communities and in some facilities

10. PROFILE/S OF EVALUATOR/S

A team of 2 evaluators is foreseen for this evaluation.

Evaluator 1 – Evaluator with medical profile

- Medical/paramedical degree
- Proven experience in health promotion/community engagement
- Operational/managerial experience
- Solid experience in applying techniques of qualitative data collection and analysis
- Experience in conducting evaluations
- Experience in collection and analysis of quantitative data
- Understanding of the relevance of community activities in resource-limited countries
- Excellent analytical skills with attention to detail and drawing well-grounded conclusions
- Proven report writing and presentation skills
- Working experience in MSF is a strong asset
- Very good written and spoken English and French

Evaluator 2 – Evaluator skilled in qualitative research

- Academic degree in relevant field
- Long standing experience in designing and applying techniques of qualitative data collection and analysis

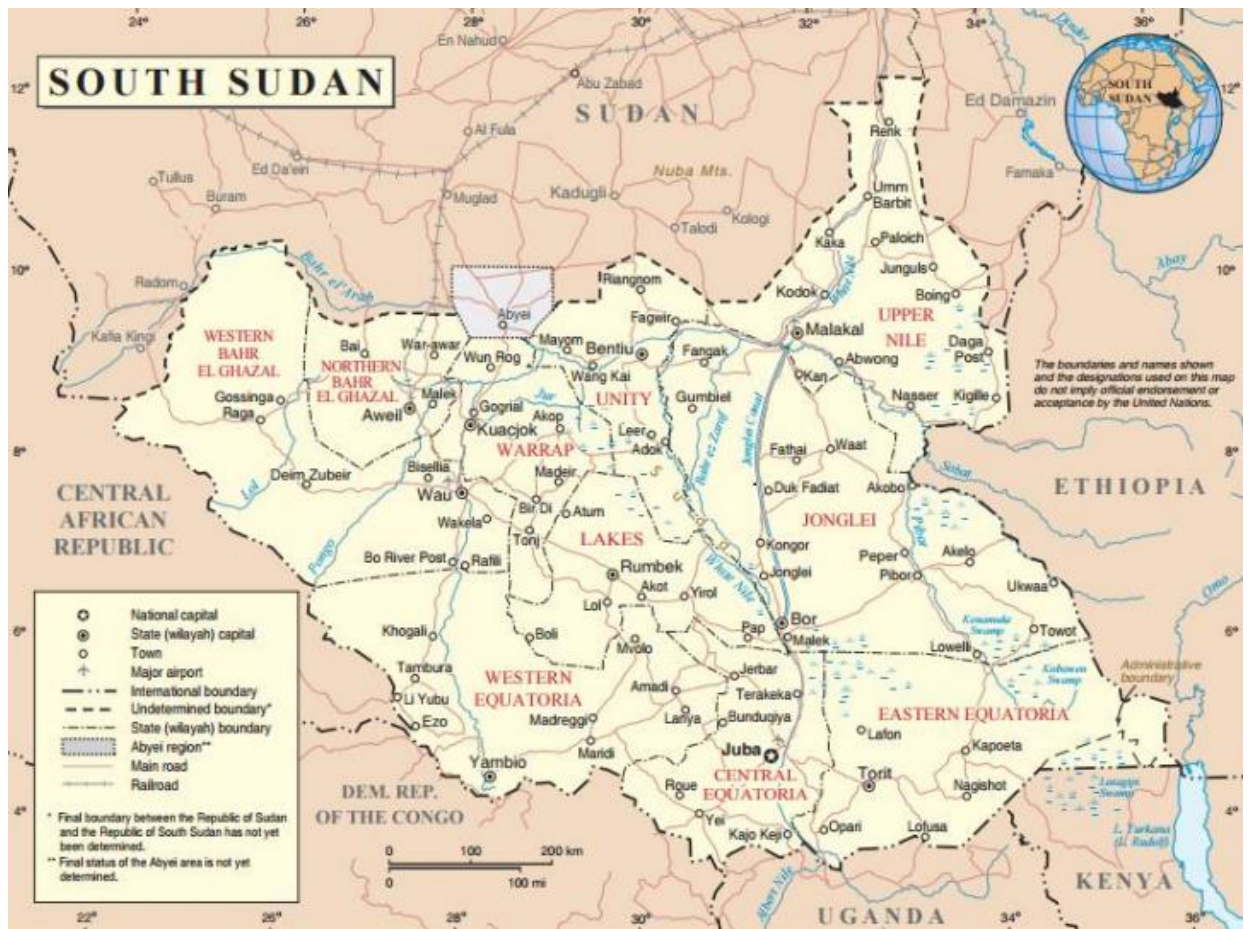
- Very good communication skills
- Working experience in MSF is a strong asset
- Proven report writing and presentation skills
- Excellent analytical skills with attention to detail and drawing well-grounded conclusions
- Very good written and spoken English
- Knowledge of French is a strong asset
- Previous Working experience in MSF desirable
- Experience in conducting evaluations is an asset

Applicants meeting the criteria are invited to apply individually or as a team.

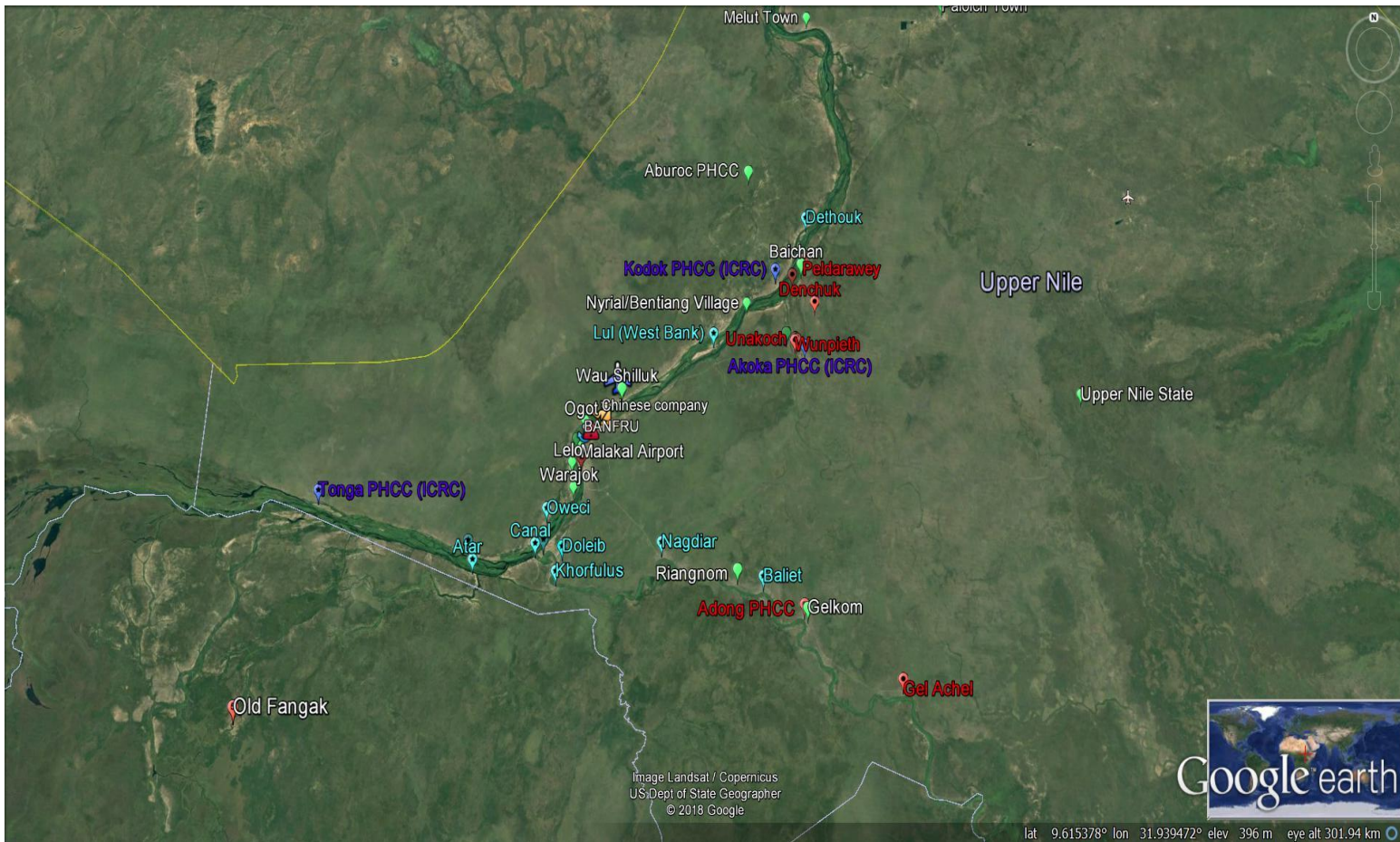
For the case study of the CAR project, in case of a need an experienced epidemiologist will support the team.

6.2 Maps

Map 1: Republic of South Sudan



Map 2 Malakal area: Akoka and Baliet axes



6.3 Interview list

MSF OCBA Headquarters- 4	
	DMC advisor
	Medical director
	Health med officer
	HP/CE/HA adviser
MSF OCBA Nairobi Cell-2	
	RECO
	TESACO
MSF OCBA Juba-2	
	HoM
	Medco
MSF OCBA Juba-former staff-4	
	Medco
	HoM
	Deputy MedCo
	Medco
MSF OCBA Malakal-10	
	Field Coordinator
	Psychiatrist
	PMR
	Deputy fieldco
	NUM Outreach DMC
	CO outreach DMC
	Nurse outreach DMC
	CO Town Hospital in Malakal
	MSF nurse supervisor for Town hospital in Malakal
	Nurse supervisor, E-room
MSF OCBA Malakal-former staff-3	
	PMR
	PMR
	Field coordinator
CHW and community - 17	

	CHW in Atiabtian
	CHW in Perdaraway
	CHW Denchuck
	CHW in Unakich
	CHW in Gel Achel
	CHW in Atiabtiab
	Nurse PHCC Rom
	Nurse PHCC Adong
KA patients referred to Adong PHCC	
DMC patients Malakal Hosp	
DMC patients Malakal PoC IMC	
FGD male Denchuk	
FGD female Denchuck	
FGD male Gel Achel	
FGD female Gel Achel	
FGD women Atiambiab	
FGD male Atiambiab	
External Stakeholders-5	
	MSF OCA Medco, Juba
	Boma Health Initiative National Coordinator, MoH SSudan, Juba
	Primary Healthcare Manager, UNICEF, Juba
	ICRC Head of Office, Malakal
	Quality health specialist, IMC, Malakal

6.4 Annual DMC strategy implementation.

Document Type	Strategic considerations	Scale of implementation
October 2016 proposal	South Soudan Decentralized Model Strategy	A new proposal done by May 2017
Annual plan 2017	<p>Outreach activities based on decentralised model of care at two levels:</p> <ul style="list-style-type: none"> Community Level: Community Health workers and Community Liaisons (15) will be used not only for surveillance but as well to decentralize the medical activities in the community for the main killers, The local community liaisons and CHW could be engaged and trained to be able to screen and provide simple treatment for non-severe cases and in the identification of complications and signs of alert to refer to MSF medical structure. Health Centre level: We propose to have decentralised model of care in three Health centres of the axe Baliet-Rom-Piggi and Melut. The decentralised package should be focused on neglected diseases or the 4 main killers according to the assessments done. It could include preventive, treatment or both components always strengthening surveillance and linked with our advocacy strategy. 	<p>The first phase was implemented on a smaller scale:</p> <ul style="list-style-type: none"> DMC at the community level started in June, 2017 but on much smaller scale, with 6 community sites. On Baliet axis both CB sites were closed at the end of 2017. Two PHCC on the Akoka (Riang and Rom) axis and one on Baliet axis (Adong). Preventive package was not included
Annual plan 2018	<p>Development of second phase of DMC in Baliet area. Add ARTI, and TB/HIV/KA. Improve communication and referral system.</p> <p>Support SRH through engagement with TBAs –trainings to identify risk signs in pregnancy and need of referral to health facility, distribution of clean delivery kits. Development of SGBV component in the outreach.</p>	<ul style="list-style-type: none"> On Akoka axis only 4 community sites are functioning: Danshuk Peldirawey Unakoch Wunpitch.⁷⁶ Baliet axis community sites are both closed during 2018, GelAchol is reopened only in December. SRH and SGBH components not implemented, TBAs not recruited.

⁷⁶ 2018 Annual report.

Annual plan 2019	Prioritization of innovative community health approaches & preventive action on main killers including WASH for populations in remote & insecure areas affected by violence, with no access to healthcare.	CHWs and other resources were reduced in 2019, which has led to reduction of the plans. ⁷⁷ On Baliet axis a cancelation of plans to open two new community bases (Gelkom and Riagnom); on Akoka axis Baichan community and Riagnom PHCC support were closed and Atiabtiab was opened. ⁷⁸
Annual Plan 2020 (Specific result for dmc)	A new assessment according to the proposal from September 2019. preventive and curative package of care of the main killer's diseases is provided in DMC locations with proper referral system in place from the community to the PHCU and from PHCU to MSF facilities for complicated cases and Surveillance systems improved in the targeted areas.	The new assessment proposal not accepted.

⁷⁷ Interviews

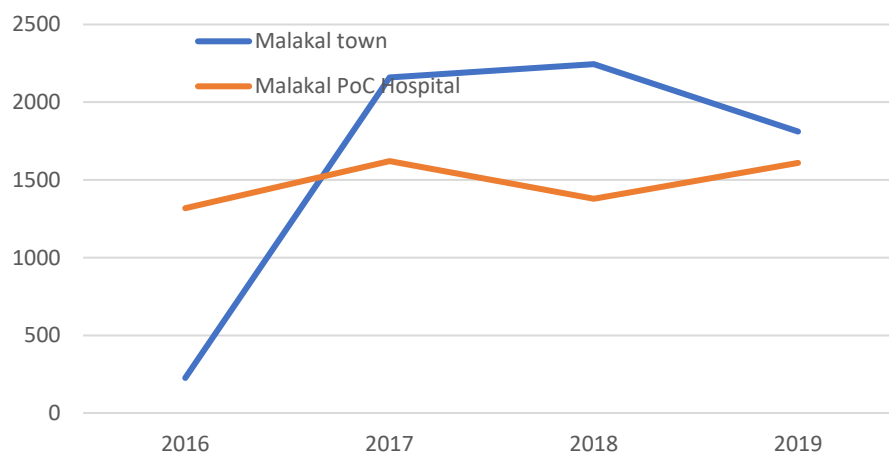
⁷⁸ Summary of DMC activities at the beginning of 2019, MSF

6.5 Hospital admissions, hospital mortality, consultations per community site

Hospital Admissions in Malakal

The mean number of admissions in 2016-2019 years was 1481 and 1610 for Malakal PoC hospital and Malakal Town, respectively.⁷⁹ Due to the start of the activities in May 2016 in Malakal Town hospital, there is an increased number of admissions from 2016 to 2017. See figure 6 below.

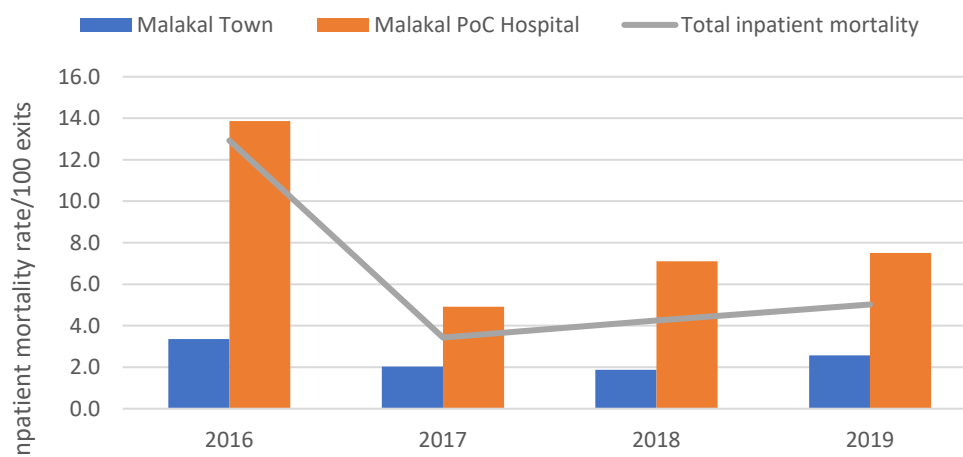
Fig. 6: Number of admission in 2 MSF-supported hospitals, Malakal project, 2016-2019



Inpatient mortality

The inpatient mortality was higher at Malakal PoC than in Malakal Town. While a marked decrease was observed at Malakal PoC from 13,9% in 2016 to 4.9% in 2017, the inpatient mortality remained relatively stable at Malakal Town with an average of 2.5%. See figure 7 below.

Figure 7: Inpatient mortality per 100 exits in 2 MSF-supported hospitals, Malakal project, 2016 – 2019

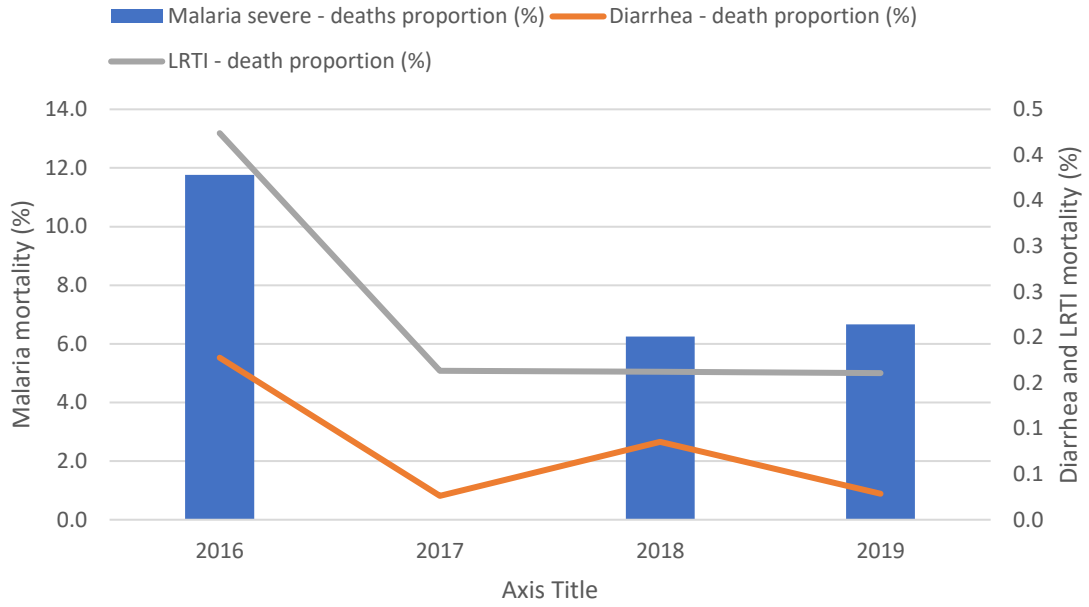


⁷⁹ The two hospitals are not far from each other and partially share the target population, but there are access problems for some tribes in one or another.

Disease specific mortality

The specific mortality for severe malaria (6,2%) was higher than for LRTI (0,2%) and diarrhea (0,1%). We observed a decrease after 2016 for both diseases. See figure 8 below.

Fig. 8: Disease specific mortality in 2 MSF-supported hospitals, Malakal project, 2016-2019



Number of consultations per DMC site and by month, Malakal project, 2018-2019											
	CHW consultations							PHCC consultations			All consultations
	Atieptiep	Danshuk	Peldarowei	Unakoch	Wunpieth	Gelachel	ALL	PHCC-Adong	PHCC-Rom	both	
Jan-18		85	130	103	41		359	1222	536	1758	2476
Feb-18		50	99	106	48		303	1117	567	1684	2290
Mar-18		20	82	66	21		189	1202	787	1989	2367
Apr-18		38	104	70	34		246	1077	596	1673	2165
May-18		38	103	72	36		249	933	516	1449	1947
Jun-18		53	123	113	43		332		707	707	1371
Jul-18											
Aug-18											
Sep-18		16	26	21	22		85				170
Oct-18		46	88	113	90		337				674
Nov-18		56	88	65	51		260				520
Dec-18		40	67	49	49		205				410
Jan-19		41	91	48	62		242	100	402	502	986
Feb-19		59	85	67	50		261	236	380	616	1138
Mar-19		51	82	55	28		216	506	628	1134	1566
Apr-19	82	34	79	38	38	98	369	547	579	1126	1864
May-19	248	0	100	46	62	86	542	1137	674	1811	2895
Jun-19	154	20	89	61	29	99	452	0	586	586	1490
Jul-19	106	51	95	51	57	88	448	729	500	1229	2125
Aug-19	193	82	110	102	78	123	688	79	820	899	2275
Sep-19	104	80	79	61	44	112	480	35	491	526	1486
Oct-19	126	75	98	54	57	134	544	791	468	1259	2347
Nov-19	111	51	91	61	49	124	487	404	398	802	1776
Dec-19	82	53	96	72	41		344	335	400	735	1423

Note: empty cells stand for missing data

6.6 Timeline key events and activities DMC strategy Malakal project

Year	Month	Activities/events	Internal/external
2013	December	<ul style="list-style-type: none"> Malakal town is destroyed by the conflict and the entire population of Malakal, consisting of different tribes, sought shelter in UNMISS Protection of civilians (PoC) compound. 	<ul style="list-style-type: none"> External
		<ul style="list-style-type: none"> The communities living in Akoka county and Baliet county have suffered repetitive acts of violence. Many of them have fled the areas. MSF OCBA is present in the PoC since the start of the crisis 	<ul style="list-style-type: none"> Internal
2014	Beginning of the year	<ul style="list-style-type: none"> MSF OCBA opens the IPD/ER services in the Malakal PoC compound, which is later transformed into a hospital. 	<ul style="list-style-type: none"> Internal
2015	29 th of August	<ul style="list-style-type: none"> A compromise peace agreement was signed by President Salva Kiir and his former deputy Riek Machar. Within days, the ceasefire had already been broken in Upper Nile state, and the government and opposition exchanged accusations of responsibility for its violation. 	<ul style="list-style-type: none"> External
	2 October	<ul style="list-style-type: none"> President Kiir issued an order to divide the country's ten existing states into 28 states, largely along ethnic lines. In this new division, Malakal town will belong to Dinka Community, which was not accepted by Shilluk communities. 	<ul style="list-style-type: none"> External
	December	<ul style="list-style-type: none"> More than 2.2 million people (1.64 million IDPs and 628,305 refugees) are still displaced due to the on-going civil war in South Sudan. 	<ul style="list-style-type: none"> External
	December	<ul style="list-style-type: none"> MSF analyses that the current calm, but tensed situation, would last for a long term and that it would take more than a year to improve the humanitarian context on ground for the east and west banks of the White Nile in Upper Nile state. In this Annual Plan 2016, the proposals of Malakal, Wau Shilluk, and Mellut projects were made on the basis of this analysis. 	<ul style="list-style-type: none"> Internal
2016	February	<ul style="list-style-type: none"> An intertribal conflict in the PoC of Malakal has led to relocation of the Dinka tribes from the compound to the city of Malakal, which has restricted access of Dinkas to the POC thus to MSF hospital. 	<ul style="list-style-type: none"> External

Year	Month	Activities/events	Internal/external
	April	<ul style="list-style-type: none"> • Nine months after signing the peace agreement, Riek Machar and the SPLA-iO leadership had finally returned to Juba to establish the Transitional Government of National Unity. 	<ul style="list-style-type: none"> • External
	May	<ul style="list-style-type: none"> • MSF OCBA addresses the health needs of the Malakal citizens (the Dinkas relocated from the PoC and other IDPs from other locations) by opening first an OPD and adding an IPD. • Eventually MSF structure in Malakal is transformed into a hospital, called Malakal Hospital 	<ul style="list-style-type: none"> • Internal
	May	<ul style="list-style-type: none"> • MoH of SS has come up with the Boma Health Initiative for community based health service delivery 	<ul style="list-style-type: none"> • External
	August	<ul style="list-style-type: none"> • Sacked VP Riek Machar goes into exile after the violent clashes in Juba. 	<ul style="list-style-type: none"> • External
		<ul style="list-style-type: none"> • MSF Spain has performed emergency response to Kala Azar's seasonal peaks in Baliet which is an endemic zone. 	<ul style="list-style-type: none"> • Internal/external
	September	<ul style="list-style-type: none"> • Head of Operational Medical Unit visit report suggests to broaden the community intervention strategy with the main killers (Respiratory Infections, Malaria, Diarrhoea) and preventative activities according to needs assessed and window of opportunities. 	<ul style="list-style-type: none"> • Internal
	October	<ul style="list-style-type: none"> • A PROPOSAL of the DECENTRALIZED MODEL OF CARE for SOUTH SOUDAN mission, Malakal project is written. It outlines MSF's willingness for 2017 year to extend the support to the facilities in the periphery, and also to go in the community. The aim is to decentralize the health care, and to bring the service near the beneficiaries. The decentralized Model of care will be done at 2 levels • At health facility (PHCC /PHCU): • In the community (especially for population with limitations to accessing healthcare) 	<ul style="list-style-type: none"> • Internal
	December	<ul style="list-style-type: none"> • The AP of 2017 does not include a DMC component. 	<ul style="list-style-type: none"> • Internal
	January-May	<ul style="list-style-type: none"> • In MSF OCBA a number of exploratory missions have taken place in the Akoka and Baliet areas in order to define the DMC proposal. 	<ul style="list-style-type: none"> • Internal

Year	Month	Activities/events	Internal/external
2017	April-May	<ul style="list-style-type: none"> A second proposal named as 'Decentralized Model of Care in Akoka and Baliet', is finalized. 	<ul style="list-style-type: none"> Internal
	1 st of June	<ul style="list-style-type: none"> DMC activities started in 2 axes: Akoka (with four CB sites: Danshuk Peldirawey Unakoch Wunpitch) and Baliet (with two CB sites: Gal Achel and Gelkok) 	<ul style="list-style-type: none"> Internal
		<ul style="list-style-type: none"> In 2017 first training materials for Boma initiative were created by the MoH consultants, who come up with the big training manuals. 	<ul style="list-style-type: none"> External
	Nov-December	<ul style="list-style-type: none"> Use of antibiotics are stopped in the community after the annual plan discussion. 	<ul style="list-style-type: none">
	from December 2017	<ul style="list-style-type: none"> HLRF Talks in Addis from December 2017 until June 2018, turned out to be a protracted diplomatic pantomime with no tangible results Gal Achel and Gelkok community sites were closed Since the end of 2017 because the areas seemed to be highly militarized and had less civilians. 	<ul style="list-style-type: none"> Internal
	January	<ul style="list-style-type: none"> The Annual Plan for 2018 foresees DMC extension and implementation in new areas as of January, 2018. In January the Mobile clinics started in the specific locations on the riverside 	<ul style="list-style-type: none"> Internal/external
2018	February	<ul style="list-style-type: none"> Analysis of the Decentralised Model of Care in Malakal was done 	Internal
	February	<ul style="list-style-type: none"> Training of the new CHW for Atiabtiab site 	<ul style="list-style-type: none"> Internal
	April	<ul style="list-style-type: none"> Opening of Atiabtiab community site 	<ul style="list-style-type: none"> Internal
	12 of September	<ul style="list-style-type: none"> Under the strong regional push (led by the interests of Khartoum and Kampala) and the international pressure, a new Peace deal was signed. 	<ul style="list-style-type: none"> External
	December	<ul style="list-style-type: none"> Guelachol DMC site is re-open on Baliet axis after 1 year of closure. 	<ul style="list-style-type: none"> Internal
	December	<ul style="list-style-type: none"> Mobile clinics on the riverside were stopped 	<ul style="list-style-type: none"> Internal
2019	July	<ul style="list-style-type: none"> BHI 1st phase of the Implementation Plan started. It will cover the period of July 2019 – December 2020. It is using updated packages and training materials from UNICEF. 	<ul style="list-style-type: none"> External
	September	<ul style="list-style-type: none"> Proposal for a new assessment for expansion of DMC. The assessment 	<ul style="list-style-type: none"> Internal

Year	Month	Activities/events	Internal/external
		should be done in the dry season, which starts in November.	
	November-December	<ul style="list-style-type: none"> • Proposal for the new assessment is not accepted during the annual planning discussion. It could be re-visited at the mid-year review for the 2020. 	<ul style="list-style-type: none"> • Internal

6.7 List of documents and references

DMC Brief paper_2018
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09_27_2016_SSUDAN_VisitReport_HOMU (Christian's visit report)
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AP16_Narrative_South Sudan_Final
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DMC chronogram03052018.xls
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history, actual situation and 2018 projection
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Tanahashi, Bulletin of the World Health Organization, 1978

6.8 Methodology: calculation of indicators

*Availability Coverage*⁸⁰ shows the coverage of the target population by CHW network. It was defined as the ratio of number of people covered by the CHWs network over the population of the axes that lived beyond the coverage area of the PHCCs. To calculate this indicator, the populations size of the CHW sites was divided by the population who lived beyond Adong and Rom PHCC coverage areas. This was also calculated for each community site separately.

Accessibility coverage: shows the proportion of population with access to healthcare over the total population. At the numerator, we used the population figures within 5 km radius⁸¹ of PHCCs and CHWs sites. At the denominator, we used the whole population figures of the axes. We calculated the accessibility coverage for each axis and each DMC level of care, including CHW and PHCC levels.

Utilization rate (contact coverage): HMIS provided data from sept. 2018 until December 2019. Data reported from the field were added for the period from January to July 2018 for CHW, as well as for Adong and Rom PHCC. If less than one-year data were available, we calculated the mean number of consultations per month and multiplied it by 12. Utilisation rates were calculated as number of consultations per year per target population. At the numerator, we used the number of consultations per year; as the denominator - the whole population figures of the DMC axes.

Referral system: We calculated the total number of referrals per CHW sites reported by month. Number of referrals from PHCC that were admitted to MSF hospitals were reported from July to December 2019. Number of referrals from CHW to PHCC were reported from Sept. 2018 until December 2019, except for Atieptiep and Gelachel for which data were available from April to December 2019 only. Referral data provided by the field were added for the period from January to July 2018 for 4 CHW (Danshuk, Peldarowei, Unakoch and Wunpieth). The rate of 'right referrals' was not assessed due to non-availability of the data.

Health facility-based mortality: Inpatient mortality corresponds to the number of deaths that occurred in inpatient department (IPD) divided by the number of IPD exits in the same period of time. The inpatient malaria case fatality rate is calculated by dividing the number of malaria deaths by the number of severe malaria cases.

⁸⁰ Definitions of the coverage indicators see in Tanahashi, Bulletin of the World Health Organization, 1978

⁸¹ Standard target populations area for PHCUs and for CHWs sites.

6.9 Tables

Table 1. Malakal Project Size, 2019

Project site	Estimated Population (2019)	Estimated under 5 yrs. (16%)
Total Malakal hospitals	53,000	8,480
Malakal POC	28,000	4,480
Malakal town	25,000	4,000
Total DMC	17,000	2,720
Akoka	12,000	1920
Baliet	5,000	800
Total Aburoch	8,672	1388
Total Malakal project	70,000	11,200

Source: Malakal project mid-year review, 2019

Table 2: DMC, estimated population, 2017 year proposal

Village/PHCU	Estimated population	Village/PHCU	Estimated population
Akoka area total	9175	Baliet area total	2810
Villages with PHCUs		Villages with PHCUs/PHCCs	
Rom	3715	Baliet	900
Riang	1970	Adong	700
Communities covered by CHWs	3490	Communities covered by CHWs	1210
Panyshan	370	Nagdiar	625
Peldiarowei	690	Guel kok	185
Atabtiab & Baibior	555	Guel Achel	400
Wunpit & Wunakoich	1380		
Denchuk & Payuel	495		

Table 3: DMC sites, 2019.

DMC activity sites *	Population covered	Position	Amount of positions
Baliet axis			
Adong PHCC	800	Nurse part time	1
Guel Achel:	500	CHW	1
Akoka axis			
Rom PHCU	3165	Nurse part time	1
Unakoch:	690	CHW	1
Wunpieth:	690	CHW	1
Peldarawei:	690	CHW	1
Dentchuk:	495	CHW	1
Atiabtiab:	1000	CHW	1
Total	8030		



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The Vienna Evaluation Unit

The Vienna Evaluation Unit was established in 2005 to contribute to learning and accountability in MSF through good quality evaluations. The unit manages different types of evaluations, learning exercises and anthropological studies and organises training workshops for evaluators. More information as well as electronic versions of evaluation and anthropology reports are available at: www.evaluation.msf.org

