Evaluation of

MSF-OCB'S END-TO-END SUPPLY CHAIN

DECEMBER 2021

This publication was produced at the request of Médecins Sans Frontières (MSF) - Operational Centre Brussels (OCB) under the management of the Stockholm Evaluation Unit (SEU).

This publication was prepared independently by an external evaluation team of consultancy hera.

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ABBREVIATIONS

APU	Amsterdam Procurement Unit
CAPA	Corrective Action Preventive Action
CoDir	Comité des Directeurs
DART	Data Analytics and Reporting Tool
DG	Directeur Général
DRC	Democratic Republic of Congo
E2E	End to End (supply chain)
EMR	Electronic Management System
EPREP	Emergency Preparedness
EQ	Evaluation Question
ESC	European Supply Centre
FC	Financial Coordinator
GDPR	General Data Protection Regulation
GPP	Good Pharmacy Practice
GSDP	Good Storage and Distribution Practices
HoM	Head of Mission
HQ	Headquarters (Brussels)
IMCI	Integrated Management of Childhood Illnesses
KPI	Key performance indicator
KSU	Kenya Supply Unit
LTL	Logistics team leader
LM	Logistics manager
MC	Medical coordinator (MedCo)
MMSR	Monthly Medical Stock Reports

MSF	Médecins Sans Frontières
MSL	Medical Standard List
MSPP	MSF Strategic Procurement Program
NRA	National Regulatory Authority
OC	Operational Centre
OCB	Operational Centre Brussels
OCG	Operational Centre Geneva
Ops	Operations
PC	Project coordinator
Ph	Pharmacist (project level)
PH	Pharmacist (coordination level)
PMR	Project Medical Referent
PPE	Personal Protective Equipment
RACI	Responsible, Accountable, Consulted, Informed
SC	Supply coordinator (SupplyCo/SupCo)
SEU	Sweden Evaluation Unit
SNA	Social Network Analysis
SOP	Standard Operating Procedure
SRH	Sexual and Reproductive Health
UNEG	United Nations Evaluation Group
WHO	World Health Organization

EXECUTIVE SUMMARY

The OCB Supply Chain aims to ensure timely and cost-effective provision of quality goods and services to all MSF OCB projects in highly complex environments, in order to achieve its medical operational ambitions. The office of MSF OCB's General Director commissioned an evaluation to assess the extent to which the objectives of the OCB Supply Chain are being met and identify areas that work and those that need further adjustments.

The evaluation had three main objectives. Firstly, to provide a descriptive analysis of the supply chain, its strategy, design, implementation, and results (*what?*). Secondly, to assess the overall performance of the supply chain with respect to delivering on the medical humanitarian ambitions of the organisation and considering the different contexts of operation and with the intention of identifying what works, when, for whom and under what circumstances (*so what?*). Thirdly, and in close consultation with the OCB Consultation Group, to make recommendations or scenarios that can be used by the CoDir to inform future strategic decisions and choices (*now what?*). The evaluation was conducted by hera, supported by the Stockholm Evaluation Unit and guided by an OCB Evaluation Consultation Group, who provided valuable input during the evaluability exercise, the inception report, the working group session and the draft final report.

An evaluation framework consisting of 11 Evaluation Questions was developed based on the evaluation's three main objectives. Data collection comprised a desk review of key OCB policies, strategies, documents and other outputs; an online survey sent to MSF staff working at project and coordination level; a social network analysis survey shared with staff working at headquarter, coordination, project level, as well as MSF Supply and the Kenya Supply Unit; a series of interviews with key informants from OCB headquarters, MSF Supply, Kenya Supply Unit, and mission countries; and country case studies in DR Congo, Haiti, Iraq and Sierra Leone.

For the findings, the supply chain design was described according to the steps of the procurement and supply chain management cycle: selection & quantification, procurement, inventory management, storage & distribution, and use. Achievements here include the MSF Strategic Procurement Programme as a way to increase efficiency and as example of successful intersectional collaboration; the large and expanding number of validated sources for local procurement, the establishment of contracts with local suppliers, the rigorous quality standards, standard operating procedures and guidelines applied; and the pool of supply chain professionals at all levels of the organisation. Challenges encountered include the large number of items in the MSF catalogue; poor forecasting and planning of international orders; poor inventory management practices; at times procurement of medicines from non-quality assured local sources; the reportedly long lead times for international orders; and the high proportion of goods transported via air.

There is no clear performance framework that monitors the OCB supply chain end-to-end, and hence limited visibility on its functioning. At international level, the one indicator from the MSF Supply Dashboard that has a target – the proportion of orders at MSF Supply that are 'ready to ship' on time, which should be at least 80% - has been achieved for the past two years. The Supply Chain Executive Platform shows that only 35% of all orders were delivered to missions within the specified lead time in 2021. At country level, the one indicator with target is the stock discrepancy between physical stock count and stock reported in

the system. This should be less than 5%, but stock discrepancies were found to be significantly higher than the set target. It should be noted that reliability of datasets at both international and national level was questioned.

We found that governance of the OCB supply chain is fragmented and only partially effective; there is a lack of clarity on roles and responsibilities of all departments and actors involved, and poor communication and collaboration across departments. Supply chain governance is not clearly documented, and available information is primarily related to process. The role and mandate of the OCB Supply Chain Department is insufficiently clear, as is its interaction with other OCB departments and with MSF Supply. Significant challenges exist in the attribution and implementation of stock management functions. Positive perceptions are related to the professionalisation of the OCB supply chain, and initiatives are being put in place to address existing bottlenecks. Though a strategy of the Supply Chain Department exists, there is no comprehensive strategy or policy guiding the overall OCB end-to-end supply chain that is developed, implemented and monitored by all stakeholders involved. Overall, the Supply Chain Department is perceived as working 'in silo', and more communication, collaboration and teamwork between individuals, between departments at all levels across the organisation will be essential.

A number of initiatives are being deployed within OCB as well as intersectionally that respond to a rapidly changing world in which the supply chain has to operate. These include sourcing closer to (projects') home, staff capacity building initiatives, and communities of practice. The OCB supply chain is making strides to adapt but will require more proactive analysis and response in order to keep ahead of the game.

Following the above, the following recommendations are made, for consideration by MSF OCB CoDir and further action by OCB:

⇒ Recommendation 1: Improve inventory management, reporting and E2E monitoring

- Improve data quality at end-user level in order to reduce stock-outs, expiry and discrepancies, improve forecasts, accountability and evidence-based decision-making
- Improve inventory management practices at end-user and warehouse level, and ensure consistent communication and guidance to MSF staff on best practices
- Conduct further analysis on the indicator 'sleeping stock' in order to distinguish between items that are stored for strategic purpose (i.e., spare parts) and items that are slow/non-moving
- Building on DART, harmonize and link existing information system in order to comprehensive report and monitor the supply chain end-to-end

⇒ Recommendation 2: Source closer to home

- Further strengthen capacity for local market assessment to validate quality sources for local procurement, thereby possibly liaising with other organisations
- Continue and expand supply chain initiatives to reduce MSF's carbon footprint, through sourcing closer to (project's) home and critically analyse modes of transport

⇒ Recommendation 3: Develop a clear supply chain policy, strategy and structure for governance

- Ensure governance processes are clarified and documented in a consultative way, in particular regarding stock management, sharing widely resulting information across OCB departments, from HQ to mission countries.
- In a consultative manner, develop a comprehensive OCB E2E supply chain strategy and policy that is jointly implemented and monitored by all stakeholders involved in the end-to-end supply chain

⇒ Recommendation 4: Stay ahead of the (supply chain) game

- Proactively and critically analyse rapidly changing context and new challenges that could affect the supply chain for both the regular and emergency-related operational response, in order to go from being more reactive to more proactively anticipate supply chain issues, for instance through scenario planning, and in collaboration with other OCs and ESCs

⇒ Recommendation 5: Communicate, collaborate and work together

- Consider training and Learning & Development of medical, logistics and E-pool staff on supply chain-related issues, as well as supply chain staff on health-, log- and emergency-related issues to increase understanding of each other's areas of expertise, and improve collaboration at all levels
- Encourage the inclusion of key staff from all departments – including the E-pool – in regular review meetings on supply chain-related issues at country and HQ level, to discuss needs, data, strategy, and agree on next steps
- Prioritize communication, collaboration & teamwork in order to foster a culture of safety and openness; to move from focusing on action to also give priority to the level of interaction of individuals and departments at all levels across the organisation.

INTRODUCTION

BACKGROUND

A strong supply chain ensures that the right quality product, in the right quantities, and in the right condition is delivered to the right place, at the right time, for the right price, and to the right patient. As a medical humanitarian organisation, ensuring timely and cost-effective provision of quality goods and services to projects is a fundamental prerequisite for Médecins Sans Frontières (MSF) Operational Centre Brussels (OCB) to achieve its medical operational ambitions, both in responding to sudden onset emergencies and in routine programming.

The OCB supply chain comprises the Supply Chain, Medical and Logistics Departments, Operations, MSF Supply, Kenya Supply Unit (KSU), and numerous supply, medical and logistics staff and pharmacists in projects and at coordination level. The direct spending in the supply chain on goods – the focus of this evaluation – represents around €62 million annually. It is an End-to-End and demand-driven (pull) supply chain, whereby the orders are placed by projects, through periodic ordering, or ad-hoc.

The OCB Supply Chain deals with numerous complexities inherent in the operational environment, including challenges directly related to the supply of goods to projects which need communication and coordination between different departments and expertise areas, but also the wider operational context in which MSF works which is becoming increasingly complex.

OCB operations have high medical humanitarian ambitions and operate in a complex environment. The OCB supply chain has therefore to operate within a rigorous environment to be aligned with high quality standards, but also to respond to the specific needs and requirements of MSF's operations and initiatives.

PURPOSE OF EVALUATION

The office of OCB's General Director commissioned an evaluation to assess the extent to which the objectives of the supply chain are being met and identify areas that work and those that need further adjustments. The evaluation aims to inform discussions and future decisions by the MSF OCB Comité des Directeurs (CoDir).

As per the ToR (see Annex C), the objectives of the evaluation are threefold. Firstly, to provide a descriptive analysis of the supply chain, its strategy, design, implementation, and results (*WHAT?*). Secondly, to assess the overall performance of the supply chain with respect to delivering on the medical humanitarian ambitions of the organisation and considering the different contexts of operation and with the intention of identifying what works, when, for whom and under what circumstances (*SO WHAT?*). Thirdly, and in close consultation with the OCB Consultation Group, to

make recommendations or scenarios that can be used by the CoDir to inform future strategic decisions and choices (*NOW WHAT?*). The evaluation includes the supply of goods (medicines and medical supplies, as well as logistics supplies) and not of services.

The deliverables of the evaluation include an **evaluability exercise** to ensure a common vision of the evaluation (completed in August 2021); an **inception report** with a detailed evaluation proposal and methodology (completed in September 2021); a **working session** with the OCB Consultation Group (held December 7, 2021) to present findings, collect feedback and facilitate discussion on lessons learned and recommendations; a **draft evaluation report** outlining findings and initial recommendations (current document); and a **final evaluation report** (December 2021), including **presentation of findings** (January/February 2022, to be decided).

The evaluation was overseen by the **OCB Evaluation Consultation Group**, which consists of 10 members: the deputy General Director, Medical, Supply Chain and Logistics Departments, supply chain officer from Cell 1, QA pharmacist from the Medical Department, supply chain coordinator from Iraq, medical coordinator from Haiti, the pharmacist, and President of the Board from MSF Supply. The deputy General Director was at the same time the commissioner of the current evaluation, on behalf of the General Director's office. The manager of the Stockholm Evaluation Unit (SEU) managed and supported the evaluation process and provided guidance throughout.

Throughout the evaluation process, the evaluation team held regular bi-weekly calls with the SEU evaluation manager, to provide updates on progress, discuss challenges and identify way forward, and agree on key aspects of the evaluation as needed.

METHODOLOGY

EVALUATION FRAMEWORK

The ToRs included three overarching evaluation questions which aimed to respond to the main objectives of the evaluation: the WHAT? – providing a descriptive analysis of the supply chain, its strategy, design, implementation and results; the SO WHAT? – looking the overall performance of the supply chain with respect to delivering on the medical humanitarian ambitions of the organisation and considering the different contexts of operation; and the NOW WHAT? – coming up with recommendations that can be used by the CoDir to inform future strategic decisions and choices are made.

In the inception report, the evaluation team proposed a revised set of eleven evaluation questions, which were agreed by the Consultation Group and are summarised in Table 1 below. The full evaluation matrix is presented in Annex B.

Table 1 Summary of revised evaluation questions.

ISSUE	TOPIC	EVALUATION QUESTION (EQ)
OCB supply chain specific		
What?	Design	EQ1: What is the set-up/design of the end-to-end supply chain for goods in MSF-OCB?
	Governance	EQ2: What is the governance of the supply chain of goods in OCB?
	Strategy	EQ3: What is the strategy guiding the supply chain?
So What?	Design	EQ4: What is the performance of the supply chain of goods?
	Governance	EQ5: How effective is the governance of the supply chain of goods?
	Strategy	EQ6: To what extent is the strategy relevant to OCB's supply chain?
OCB supply chain within the wider context		
What?	Internal context	EQ7: Which are key elements of the internal operational environment in which OCB operates?
	External context	EQ8: Which are key elements of the external operational environment in which OCB operates?
So What?	Internal context	EQ9: To what extent is the OCB supply chain adapted to the internal operational environment?
	External context	EQ10: To what extent is the OCB supply chain adapted to the external operational environment?
	OCB's operational ambitions	EQ11: How well aligned is the current supply chain to OCB's operational ambitions?
Conclusions and recommendations		
Now What?	Discussion on findings with Consultation Group during Working Session; jointly draft recommendations that can be used by the CoDir to inform future strategic decisions and choices are made	

APPROACH

As outlined in the inception report, the evaluation uses a realist-based approach. This approach has proven to satisfactorily address the inherent complexity of certain types of interventions as well as to contribute to practices about how programmes, policies and projects are designed. The complete realist question is: *"What works, for whom, in what respects, to what extent, in what contexts, and how?"* – which corresponds to the evaluation questions outlined in the previous section.

In order to answer these questions, primary and secondary qualitative and quantitative data were collected at different levels, from a variety of stakeholders involved in the supply chain, using different tools and methods. Apart from a comprehensive desk review, views from a broad selection of MSF staff involved in the supply chain of goods in the mission countries were collected through a survey, complemented by key informant interviews with staff in the projects as well as at OCB, MSF Supply, and the Kenya Supply Unit (KSU). In addition, we conducted a social network analysis amongst a subset of key stakeholders at Headquarters (HQ), MSF Supply, KSU, country coordination and project level for DRC. Lastly, in-depth case studies were conducted in four countries as suggested by OCB: Iraq, Haiti, Democratic Republic of Congo (DRC) and Sierra Leone, whereby quantitative and qualitative data were collected at coordination (capital) and project level.

DATA COLLECTION

DESK REVIEW

The desk review commenced during the inception report and continued throughout the data collection phase. A list of documents was received from the Consultation Group/ SEU during the inception phase, which were further complemented by internet searches, and the resulting documents were discussed and further complemented during the evaluability exercise. In addition, the evaluation team was given access to OCB platforms containing a substantial number of documents, including 'Snapshot' and 'Oops'. These platforms contain a large number of files which are not always logically structured, and it represented a significant effort for the evaluation team to sort through and try to filter the more from the less relevant. Consequently, Consultation Group members were asked to email the most relevant documents directly. Other available platforms suggested by the members were MSF Extranet and SherLog, but for above-mentioned reason the evaluation group requested direct sharing of the most pertinent documents from these platforms too. During the data collection phase, the list of documents was further complemented by key informants and through the country case studies (specifically project and mission-related files). See Annex A for the final list of documents as included in this evaluation.

The desk review also included a demonstration of the MSF Dashboard by a member from the Consultation Group, in order to better understand available indicators and select key ones to assess performance. Other files and reports that were reviewed for assessing performance included selected

monthly medical stock reports (MMSR), analyses from the Data Analytics and Reporting Tool (DART), quarterly project reports and project-specific indicator lists.

SURVEY

In order to collect views from a broad selection of MSF staff involved in the supply chain of goods in the mission countries, an online survey on Alchemer[1] was conducted. The survey focused on gathering information about the effectiveness and efficiency of the MSF supply chain. The survey questions were posed in English while the invite was accompanied by a document outlining the questions in French translation; respondents had the option to respond in English, French, Italian, Portuguese, Spanish or Dutch.

Our aim was to achieve a sample of respondents as representative as possible of all OCB missions. For sampling of respondents, we used the OCB Ops List 2021. After feedback from the Consultation Group, a total of 26 countries were included in the sample. Within each mission country, the survey was sent to two different profiles in a randomly selected project and two different profiles based at coordination (capital) level that are most involved with the supply chain. In order to keep a balance between the different departments involved, the number of respondents from the Medical Department (pharma and other medical profiles, 26+15) were similar to those involved in the Logistics and Supply Chain Departments (19+21), followed by profiles from Operations Department (19) and Finance (4).

The survey was pre-tested by three members of the Consultation Group, and further finetuned based on input received. We initially targeted 104 respondents, but five email addresses came back with a delivery notification failure and another two email addresses could not be obtained. Finally, the survey was sent out to a total of 97 MSF staff and remained online for 3 weeks during which two reminders were sent to respondents.

Despite reminders and keeping the survey open for 3 instead of 2 weeks, the response rate was lower than anticipated: 35% (or 34 out 97) versus an anticipated response rate of at least 40%. Despite this, the respondents covered a good spread of countries (19 of the 26 countries provided feedback), a balance between project and coordination level (64% and 36%, respectively), and represented a widespread in positions (see Figure 1). We hence feel that the data gathered through the survey provide a valuable and representative voice from the mission countries. For about half the respondents, this was their first mission. Almost half (47%) said they worked in supply chain management of medical or logistics items before, while 39% said they did not, and 14% answered ‘to some extent’.

[1] https://www.alchemer.com/

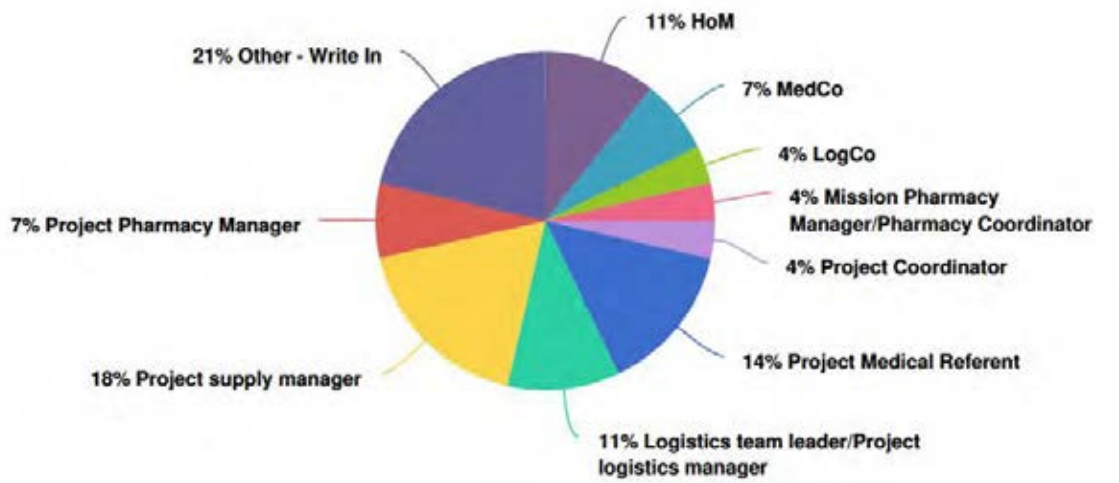


Figure 1 Positions of survey respondents

KEY INFORMANT INTERVIEWS

Twenty-three key semi-structured interviews were conducted with key persons involved in the MSF OCB supply chain, divided evenly between OCB personnel from the missions and from HQ as advised by the Consultation Group. Key informants were distributed between OCB HQ (12), MSF Supply (2), KSU (1), country coordination (5) and projects (3). Three project-level key informants included in the sample were not available to conduct interviews. Interviews led by the core evaluation team were complemented by those carried out at coordination and project levels as part of the country case studies (see below).

Based on the updated evaluation matrix, the evaluation team developed an interview guide with main question and prompts, which was tailored to the different profiles of the respondents. Interviewees were asked their views and opinions on the supply chain set-up, governance, performance, and indicators, guiding documents and strategy, among others.

The SEU made initial contact with the key informants to invite them to the interviews and put them in touch with the evaluation team, who then arranged the logistics for each of them. Interviews had a duration of approximately one hour, were conducted mainly via Teams or Zoom (using the platform the interviewee preferred), conducted in English (21) and French (2), and took place between 19 October and 19 November 2021.

SOCIAL NETWORK ANALYSIS

A Social Network Analysis (SNA) was carried out in order to analyse interactions in the OCB supply chain. SNA is a methodology widely used in social sciences, was applied in this evaluation to study a segment of the supply chain, from project to OCB cell level. It was agreed to involve 15 staff, representing OCB HQ (Log, Medical, Operations-Cell and Supply Chain Departments), MSF Supply, the

KSU, and representatives of Log, Medical, Medical-Pharma and Supply at both Mission and Project level in DRC.

Data used to perform SNA was collected via a separate online survey, which was developed in English, with the option to respond in French. The survey asked each targeted respondent to recall the frequency of interaction with all other members of the network, which tools were used to communicate (email, telephone, etc), and the quality of the exchanges regularly held. See Annex D for the analysis of the SNA.

The SEU supported in the identification of respondents and made initial contact with them, with further communications being managed by the evaluation team with SEU support as needed.

COUNTRY CASE STUDIES

As per the inception report, four country case studies where MSF OCB has operations were included as case studies. In each, a more in-depth understanding on the mechanisms and process of the OCB supply chain was gathered from the coordination and project points of view. Overall, this part of the evaluation focused on analysing issues such as design of the MSF supply chain, governance, MSF operational environment, satisfaction amongst staff and country stakeholders, country context and external factors that help or hinder the effective and efficient supply of goods.

Selection of countries to be included as case studies were discussed during the evaluability exercise, and subsequently upon submission of the inception report. Criteria included the different geographical regions, complexity of the supply chain, strategic importance for OCB operations and security. Within each country, one project to be visited was selected in consultation with the coordination team and taking into account the project's staff availability to receive the evaluator(s). The final selection of countries and projects were as follows: **Sierra Leone** (Kenema hospital), **Iraq** (Mosul maternity and surgery), **Haiti** (Port-au-Prince maternity and surgery), and **DRC** (Kinshasa HIV project).

In each country, a national consultant was hired to perform data collection, based on terms of reference that were drafted by the evaluation team. Selected consultants had extensive expertise in supply chain management, qualitative data collection techniques, and contextual sensitivity. Two members of the evaluation team (Team Leader, PSM specialist) were in daily contact with the consultants, to discuss preliminary findings, and find solutions to any arising issues. In Iraq, the evaluation Team Leader joined the national consultant in data collection.

Data collection took place over a five-day period in each country in each of the countries, interviews were conducted with informants at coordination level and in each country at least one project was visited, where further interviews with key personnel involved in supply chain was conducted. Furthermore, the warehouses and other supply-related locations were visited.

The country case studies provide valuable information and examples to the current report. However, due to the limitations (outlined below) are felt not to provide a fully comprehensive picture of the supply chain of goods in the countries visited. For this reason, the case studies are not presented as stand-alone reports but rather integrated in the current report.

DATA ANALYSIS AND MANAGEMENT

In line with United Nations Evaluation Group (UNEG) norms and General Data Protection Regulation (GDPR), all identifying information of interviewees and survey respondents were removed and notes/transcripts anonymised. At all times, use of data was restricted to the agreed purpose and data management practices are based on set standards (including with regards to integrity, transparency, and clarity).

All relevant documents obtained through the desk review were uploaded in the content analysis software MAXQDA[2], and coded according to the Evaluation Questions (EQ) and defined sub-categories within EQs. Responses from the key informant interviews were transcribed using Trint[3] software, uploaded in MAXQDA, coded, and analysed according to the EQs and defined sub-categories (in line with document review coding). The MAXQDA coding structure for the evaluation was jointly developed by the evaluation team. This allowed to apply univocal coding agreed amongst team members to all documents and information under review. This ensures comparability of interpretation of the information processed, and findings and recommendations being based on univocal, traceable content analysis.

For the online survey, closed questions (categorical and numerical variables) were analysed using relevant statistical methods in Alchemer, whereas responses to open-ended questions were analysed using content analysis.

The dataset from the SNA was analysed using the NodeXL[4] software, which calculates key metrics for the network and its actors and provides a visual representation of the relationships. Qualitative data from the survey was analysed through content analysis. Key findings of the SNA are integrated in this report, and the analysis is presented in Annex D.

The country studies visits were written up as case studies, which address the evaluation questions based on available information. In ongoing interaction and consultation with the core evaluation team, national consultants applied content analysis to information collected at country level through document review and key informant interviews.

[2] https://www.maxqda.com/
[3] https://trint.com/
[4] https://nodexl.com/

Information obtained through mixed methods of data collection, including document reviews, interviews with key informants, responses to an online questionnaire, and results of country case studies was triangulated.

The analysis yielded an initial set of findings and preliminary recommendations, which were discussed with the Consultation Group during the working session. Here, further feedback was collected, and preliminary recommendations were discussed.

LIMITATIONS

The following risks, limitations and mitigation measures were noted:

- A large number of documents and sources was made available to the evaluation team, however not all of these were relevant for the evaluation or were matching its scope. Also, through feedback from the Consultation Group, the evaluation team selected a more reduced set of documents for in-depth review. In particular with respect to governance, very limited factual information was available.
- Despite efforts from the evaluation team, the response rate for the survey remained lower than what would have been desirable (35% actual vs 40% aim). However, responses received are representative of different country contexts, and of different positions within the OCB supply chain. We hence feel that the data gathered through the survey provide a valuable and representative voice from the mission countries.
- Out of the 26 key informants selected for in-depth interviews from the evaluation team, three were not available to participate, two from project and one from coordination level.[5] Considering that additional interviews at project level were carried out as part of the case studies, project-level staff was adequately represented in data collection. Overall, saturation of information was achieved through data collection, and SEU's support in involving key informants was critical in facilitating the process.
- Challenges were encountered in receiving adequate response rate in the SNA analysis, and the evaluation team followed up multiple times to support increased response rate. With the same goal, the survey was online for three weeks instead of the two initially foreseen, and support from Cell 1 was requested in order to stimulate engagement at project level. It was decided that project responses would no longer be collected from the Masisi project, but that the HIV project selected as a case study would be involved instead. Despite the multiple reminders and support received, the response rate remained relatively low at 60%, and OCB HQ and project level were represented by only one respondent each. Despite these limitations, the findings of the SNA provide a good overview of interactions within the supply chain.
- Regarding country case studies, particular challenges were encountered in Sierra Leone, where MSF medical staff was not available for interviews, and the hospital and pharmacy in Kenema could not be visited by the consultant. In DRC, the international consultant was not able to participate in data collection as initially foreseen due to a 5-day Covid quarantine requirement

[5] This included one financial coordinator, one logistics team leader and one mission pharmacist

upon arrival in the country. However, data collection was conducted by the national consultant. In this country, security issues also prevented the consultant from visiting the Masisi project, and the Kinshasa HIV project was included instead. In Haiti, the security situation did not make it possible to visit projects outside of Port-au-Prince.

FINDINGS

A strong supply chain ensures that the right quality product, in the right quantities, and in the right condition is delivered to the right place, at the right time, for the right price, and to the right patient. To achieve this objective, it needs a functioning design of the different components the supply chain is made up of, a proper governance structure involving the different stakeholders, and an operational strategy or policy guiding the supply chain within the wider context.

Findings of the evaluation are written up as follows: first, the set-up/design of the OCB supply chain is described according to the different steps of the procurement and supply chain cycle (EQ1, as well as its performance (EQ4)). Then, the governance of the supply chain is laid out (EQ2), followed by the question on effectiveness of its governance (EQ5). We then look at the supply chain strategy (EQ3) and the relevance of the strategy to the supply chain (EQ6). Subsequently, key elements of the OCB internal and external operational context are provided (EQ7 and EQ8), and we review the extent to which the supply chain is adapted to these (EQ9 and EQ10). Lastly, we assess the extent to which the supply chain is aligned to the OCB operational ambitions (EQ11).

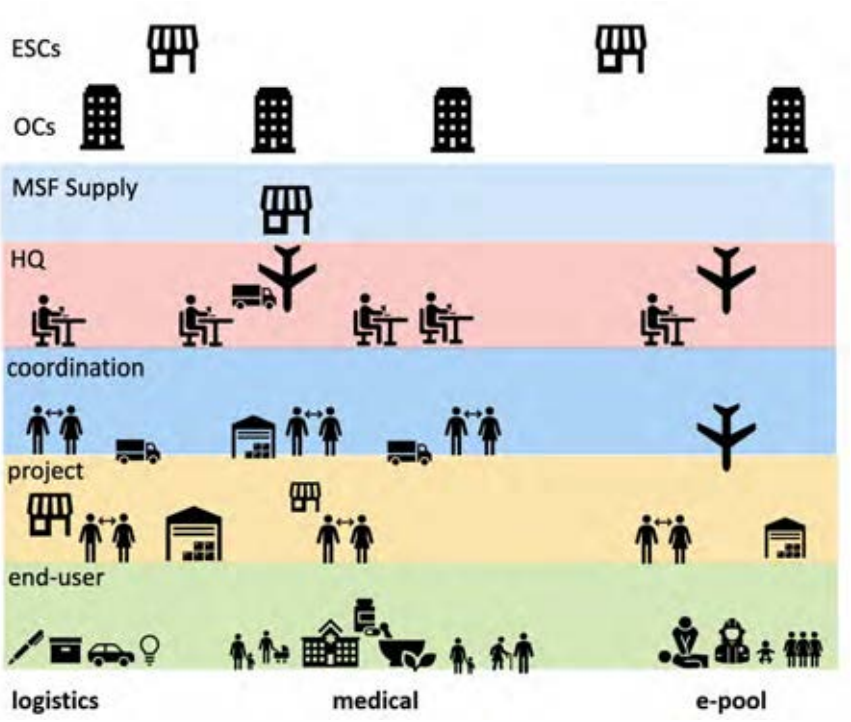


Figure 2 Simplified overview of the OCB supply chain (source: hera)

OCB SUPPLY CHAIN DESIGN

HOW IS THE OCB SUPPLY CHAIN SET UP? (EQ1)

The design of the OCB supply chain is described according to the well-established steps of the procurement & supply chain cycle[6]: selection, quantification, procurement, storage and distribution, inventory management, and use. Some of these aspects are more relevant or more demanding for medicines and medical supplies, for instance assuring quality of products for procurement and during storage, and rational use. However, the cycle can be equally applied to the supply chain of logistics goods. In each of these areas, a description of the set-up and different actors involved is provided, and specific observations made.

Overarching elements in this cycle include information systems, financing, human resources, governance, and service delivery. The component of information systems of the OCB supply chain is incorporated in the section on inventory management, whilst Section 3.2 focuses on governance, and human resources related to the supply chain are briefly discussed in Section 3.3. Service delivery and financing of the supply chain are beyond the scope of the current evaluation.

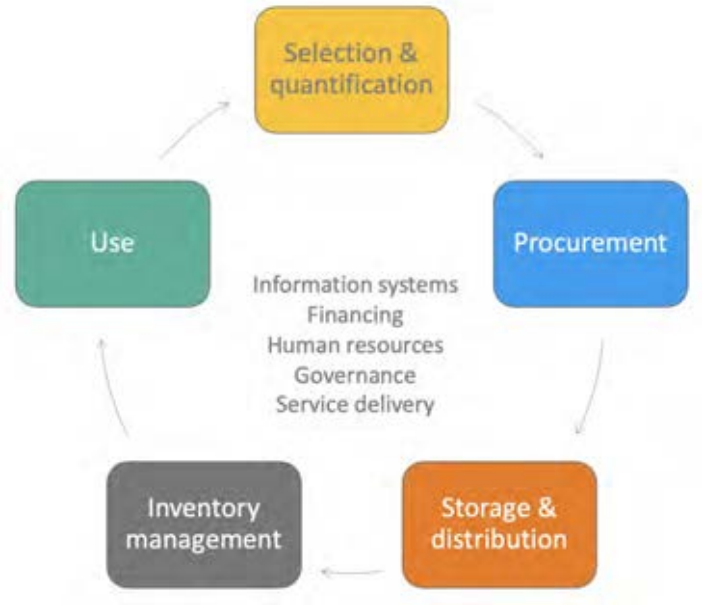


Figure 3 Source: adapted by hera from WHO/Managing Drug Supply

Selection & Quantification

The **selection** of medicines and medical supplies used in MSF projects is based on the MSF standard list for medicines and medical supplies (MSL, Medical Standard List), which a validated online tool set up as an intersectional initiative and in process of being implemented by all OCs. Each mission creates

[6] https://www.msh.org/resources/mds-3-managing-access-to-medicines-and-health-technologies

its own MSL tailored to the contextualised needs of the country. These lists are updated on a regular basis, by deleting items that will no longer be used and are no longer in stock, and by adding new items requested by the medical staff, a process that usually requires agreement with the technical referents in HQ.

Most items selected by the projects that are ordered internationally (from MSF Supply) are included in the MSF Supply catalogue, which comprises a total of 16,800 items with international standardised product codes managed through a platform called UniData. MSF Supply has a total of 2,500 items in stock, and 84% of order lines are filled from stock (2021 data). These include medical products (medicines, medical devices, nutritional products, biomedical equipment, and medical emergency kits) as well as non-medical products (communication equipment, shelters, water-hygiene-sanitation techniques, and vehicles and tooling).

When a project requests an item that is not in the catalogue, it needs to be added. For instance, the orthopaedic surgery programme in Iraq requires a wide range of specific screws for internal fixation of bones and has a rehabilitation post-surgery component for which physiotherapy appliances are required. These are non-standard items which then need to be specifically sourced by MSF Supply and added to the Catalogue.

Items that are required by the projects and procured locally include construction material, equipment (i.e., generators), furniture and office supplies, while fuel takes up a considerable part of the budget. Selection of these items is based on identified need.

In routine projects, **quantification** of needs of medical products is based on the forecasts made at project level by the medical team based on previous consumption data as well as projection of need,

In the Iraq project, the last two international orders were made by means of an International Order Tool. This is an Excel-based tool that captures information on the Average Monthly Consumption (AMC) based on Unifield (warehouse) and Isystock (pharmacy) data, a forecasted monthly consumption based on planned activities; stock levels at the warehouse and the pharmacies; pipeline data and loan return data; to come to a final validated total order quantity. The tool is completed by the Medical Department during a 3-day meeting, during which the pharmacy manager and pharmacy supervisor, nursing team supervisor, Operating Theatre team supervisor, nursing activity manager, medical activity manager and lab supervisor sit together to review item by item, and ensure the order accurately reflects not just past consumption and items in stock but also future plans. This validated quantification is subsequently submitted as an order by the Supply Chain Department for further processing. This participatory process was highlighted by a number of interviewees in Iraq as best practice of collaboration between medical/pharmacy and supply.

taking into account existing stock levels and products in the pipeline. This forecast is subsequently validated by the Project Medical Referent (PMR), by the medical coordinator (MedCo) at coordination level, and – for larger international orders – by the Cell at OCB HQ. A number of missions make an annual forecast with corresponding budget, which are then adjusted throughout the year.

For emergency projects, quantification of needs is primarily done by HQ by means of projection of needs based on MSF's (extensive) experience, and also includes pre-packed standardised medical kits.

> "For an emergency project there is much more allowed. And then on the medical side, I would say, it's a bit like, let's not be too picky on the estimations."
>
> – Key Informant

Efforts to make forecasts for Covid-19 supplies in 2020 were highlighted as a good example of coming up with a comprehensive quantification based on exposure and likelihood of infection. However, this seems to be the exception rather than the norm.

Quantification of logistics items are based on needs as expressed by the staff in the project from all departments (logistics, but also admin, medical and supply) and available budget, and orders are subsequently validated by logistics team leader (LTL) and submitted to the Supply Chain Department for procurement from local or sometimes international sources.

Observations:

- The number of items in the MSF Catalogue is very large (16,800) and is increasing every year, partly due to the fact that items not required by the project anymore are not removed. Key informants said that the very large list of different items makes it difficult for the projects to choose and complicate the management of the supply chain. A survey done by MSF Supply earlier this year (2021) to inform its new strategy also identified the large assortment of items as a challenge and concluded to 'better keep it small and focus on service level'. [7] The MSL tool is intended to help address this challenge.

> "… the number of number of items in our supply chain is huge, it increases every year, they add more and more items [to the catalogue], but they never clean the ones not used. We have a catalogue that is huge, it has a very big impact on the supply chain. …. There are so many they don't know how to choose."
>
> – Key Informant

[7] MSF-Supply strategy revision: Survey/interviews with stakeholders: Key findings (2021)

- Forecasting and quantification is identified as one of the weakest links in the OCB supply chain by key informants and survey respondents. This can be attributed to a number of factors. For one, consumption data are not always available – especially for recently established projects – and reliable consumption data from other sources might be difficult to obtain. In addition, projection of need – or demand – might be challenging. One example is increasing resistance to first- and second-line antibiotics whereby a culture is required to determine which specific type of antibiotics a particular patient needs. In other cases, a sudden large influx of patients (i.e., due to displacement) will cause a major increase in (unforeseen) demand, and potential shortages as a result. Another reason cited that undermine proper forecasting is quality of data that are used as a basis for the forecast, from different inventory management tools such as Isystock, Unifield, stock cards and others. For instance, a large discrepancy between the actual stock and stock as reported through Unifield will lead to an improper quantification based on the quantity of items in store. In addition, projects report a lack of (timely) communication between the medical and the pharmacy staff, and between Medical/pharma and the Supply Chain Department, which directly affects forecasting and quantification of needs (see also Section 3.2). Lastly, non-adherence to standard treatment protocols also undermines forecasting efforts (see "Use" in this Section).

> "…. often after one or two months the forecast is already completely obsolete. We have a 30% accuracy on the forecasts overall, which makes our work quite complicated"
>
> – Key Informant

Procurement

International orders are placed by each of the projects approximately three times per year (variations between missions) through the "Portail" (Portal), after which it receives final approval from operations, the Medical Department and the Cell. It is then automatically received by MSF Supply for further processing. In 2021, the average number of days between order formulation by Med/Log in mission countries and reception in country (delivery by MSF Supply) was 166 days, with the nine different steps as follows: order formulation, validation, confirmation, preparation, documentation, pre-clearance, consolidation, transportation, and reception (see also Section 3.1.2). The process of ordering and validation of medical items was rated by survey respondents as a step that is working well within the whole supply chain process.

International orders for routine projects should be submitted according to a chronogram developed by the mission. For emergency projects, orders can be placed when needed, and for large emergencies may be submitted on a weekly or monthly basis. Figure 2 shows the fluctuation in total order lines at MSF supply for emergency and routine projects over the past two years.

Figure 4 Total order lines at MSF Supply – emergency vs. routine, 2019-2021 (source: MSF Dashboard)

MSF OCB procurement policy for the procurement of medicines and medical supplies gives clear priority to imports from the MSF Procurement Centres located in Europe: MSF Logistic, MSF Supply and Amsterdam Procurement Unit (APU). As mentioned above, the vast majority of medical products (approx. 85%) are procured through international orders mostly from MSF Supply, as per MSF procurement policy. MSF Supply in turn strategically sources and purchases all products, guided by MSF global procurement policy and the MSF Strategic Procurement Program (MSPP), a global procurement policy to increase alignment within procurement by the different European Supply Centres (ESC). MSF Supply mostly caters to OCB, processing around 9,600 orders per year, or 76,000 order lines. This has slightly increased over the past 5 years. MSF Supply provides items with at least one third of the shelf-life. For countries with importation constraints MSF Supply adapts this rule and aims to provide articles with a longer shelf-life. Once goods arrive at port of entry in the mission country, the responsibility is transferred from MSF Supply to the Mission.

Around 15% of all medical products are procured locally, and criteria for local procurement are evaluated by country and on a case-by-case basis. If the decision to use local procurement is approved, it must be done following the recommendations made by a section pharmacist after the assessment of the local market. Situations when local medical procurement is justified are legal or administrative barriers to importation, or a medical emergency. Indeed, importation and custom clearance have been identified as major issues in many countries, becoming more difficult and bureaucratic (see also Section 3.4.2 on the external operational context).

Around 80% of all logistics items is procured from local suppliers, and in some cases regionally (i.e., South Sudan procuring from KSU or from Uganda). Logistics items are purchased internationally primarily through MSF Supply and include biomedical devices, laptops and vehicles.

All departments in the project – HR & finance medical, logistics, supply – can order logistics items through an internal request. Each order has to be validated by the budget owner, as specified in the project's internal agreement signed by the different departments: 1) HR & finance to approve orders related to for instance hygiene and stationary items; 2) Log for all transport and log family codes (i.e. mechanics, water/sanitation, electricity, spare parts, generators, construction materials, telecoms, cold chain equipment, fuel); 3) Med for all medical family codes (medicines, medical supplies and medical equipment), transport of patients and blood samples, and food for patients; and 4) Supply for domestic freight, loading and unloading services. Local procurement of logistics items is in some projects done through longer-term contracts, whilst in others on a case-by-case basis. When asked about what is working well within the logistics supply chain, survey respondents rated the steps of ordering & validation and (local) procurement scored highest.

For emergency goods, procurement processes are more straightforward: there is a high ordering frequency based on evolving needs, procurement is done internationally or locally if (reliable) sources are available and faster to access, and everything is transported by air.

Observations:

- The order validation process was highlighted by survey respondents as a successful example of what is working well in both the medical and logistics supply chain, reflecting validation processes at project and coordination level. However, other interviewees from HQ felt that the many steps of the validation process slow down the process and increase lead times. Validation in the field of those who have a real understanding of the order was felt by them as more valuable than validation of the many orders that come by at HQ through "a stupid push on the button".

> "Whatever has been done in a full, inclusive, participative manner… as long as the project is with it, they can order, they encode, they validate"
>
> – Key Informant, HQ

- MSF Supply confirmed that only two or three of the 30 OCB countries actually respect placing of the orders according to the chronogram. Figure 2 above shows that order frequency fluctuates significantly over the year, not only for emergency but also for routine projects, which complicates order processing and may lead to increasing lead times and stock ruptures. In addition, some routine projects also place emergency orders, further complicating planning and processing.

> "We will never have a perfect planning on the drugs. Never. Because of the nature of our operations…we can improve for sure, but we will never have a perfect planning"
>
> – Key Informant

- The main issue highlighted by interviewees, SNA and survey respondents around international ordering and procurement from MSF Supply were the long lead times between order validation and reception in country. According to the Supply Chain Executive Power BI platform, only 35% of the orders in 2021 for OCB fell within the agreed lead time between order formulation and order reception (see also Section 3.1.2).
- Stakeholders also complained about supply of items with little remaining shelf-life, despite MSF Supply policy (see above). Long lead times and little remaining shelf-life were also mentioned in the stakeholder survey conducted to inform the new MSF Supply strategy as suggestions for improvement: better communication is needed on expiration dates and lead-times of 'non-stockable' items.
- One of the main successes of the supply chain cited by key informants is the MSPP: a global procurement policy to increase alignment within procurement by having a harmonised approach; increase consistency within MSF and towards suppliers by having key principles in place for anyone who sources and purchases on behalf of MSF; and ensure effective, efficient and transparent procurement processes and practices are applied. It was said to demonstrate the good collaboration between the Medical and Supply Chain Department, as well as between different OCs and different ESCs.
- With respect to local procurement of medical items, key informants mentioned the tension between assuring the quality of medical products on one side, and the speed, ease and/or reality of operations, which can lead to the situation that medical products are procured locally from non-quality-assured sources. Poor forecasting or planning may contribute to looming shortages calling for emergency (local) purchases, and a lack of understanding about the importance of the quality of medicines (and associated risks of substandard ones) may also contribute to missions procuring from local (at times non-quality-assured) sources.

> "En principe, on ne devrait pas faire des achats locaux. En principe. Mais la réalité, c'est que à certains moments, on va devoir traiter les patients et que pour X ou Y raison, les articles commandés peuvent être retardés"
>
> – Key Informant

- Market assessments and longer-term contracts signed with local suppliers (i.e., Iraq) for purchase of logistics items has facilitated the procurement process, reduced the lead time, saved money, ensured more reliable sources with available stock, and easier financial transactions.
- In Sierra Leone, local procurement happens on an order-by-order basis, which was said to be inefficient. For emergency goods, procurement processes were described as parallel from the routine supply chain, and 'doing their own thing to make it all happen.'

> "Once it's E-pool it's really freedom. There is a different Portail for the E-Pool, and there are no limits – if you book a cargo to Afghanistan and it costs €350m, it's green light all the time."
>
> – Key Informant

Warehousing & Distribution

Good Storage and Distribution Practices (GSDP) are a set of rules and requirements for the adequate management of medical items throughout their warehousing, transportation, and distribution. The MSF supply chain has numerous Standard Operating Procedures (SOPs) in place, which outline the processes and procedures to follow at all different steps of the chain, including for storage and distribution.

A Quality Management System, outlined in OCB GSDP guidelines (draft September 2021), covers the part of the supply chain from reception of medical items in the mission's central stock/ country's port of entry to their delivery to end-user level. Once the guidelines are adopted as final, all medical warehouses and distribution pharmacies at coordination and Project level are therefore subject to these guidelines. However, end-user pharmacies are covered separately by the MSF-OCB Policy and Protocol for Good Pharmacy Practice (GPP) in end-user pharmacies.

The SOPs and GSDP guidelines are complemented by a warehouse self-inspection tool, which allows the mission pharmacist to rate different warehousing functions and Corrective Actions and Preventive Actions (CAPA) are identified in case of non-conformities/deviations from the desired GSDP standard.

Transport of international orders happen mainly via air, and its share is increasing in 2021, 69% of all products and 55% of all expeditions were transported by air, compared to 58% and 49% in 2017, respectively. In Sierra Leone, indicators showed even that 93% of all international shipments are by air, despite the fact that it is currently not an emergency project which would arguably allow for a larger share of goods being transported via sea.

Observations:

- In MSF projects visited for the country case studies, SOPs were available (often posted on the walls) and overall good storage practices followed. However, some warehouses did not have sufficient space, compromising proper ordering. Overall, warehousing and distribution according to GSDP were highlighted as a strong component of the OCB supply chain, by key informant and survey respondents alike.
- In Iraq, the warehouse self-inspection tool and corresponding CAPAs was seen as a very helpful tool to improve good storage practices and has helped identify bottlenecks and improve storage conditions over time.
- The high (and rising) percentage of international shipments transported by air was identified as a clear opportunity for increasing efficiency in the supply chain, and at the same time addressing MSF's carbon footprint. Indeed, climate change (rather than improving efficiency) was mentioned as the main reason why this issue was brought up for discussion within MSF in the recent past.

Inventory Management & Reporting

Inventory management starts at the end-user level, and includes all activities around ordering, receiving, storing, issuing, and reordering a list of items.

MSF projects use different systems to manage the stock of medical and logistics items. Amongst these are paper stock cards, an electronic system called Isystock (used in 37 projects, unknown out of how many) for use at pharmacy level and at distribution pharmacies (entities between the medical warehouses and the end-user units) and in emergency projects, Electronic Management System (EMR) at dispensary level (only in DRC), Q4 for logistics items, and Unifield (introduced by the Supply Chain Department) at warehouse level (used in 100 warehouses, unknown out of how many).

Since the integration policy was introduced in 2014 (see Section on Governance), the Supply Chain Department is responsible for stock management at warehouse level, while the Medical Department remains the stock owner. Unifield is a software system that integrates information on both supply and finance and is managed by the Supply Chain Department to manage the medical and logistics stock. Unifield data are used for reporting through the MMSR as well as through DART (see Section on Performance).

Observations:

- Different departments provide conflicting guidance on how to manage stock. Firstly, the Supply Chain Department issued a memo in 2018 stating that stock cards can be dropped if discrepancies are kept to under 5%[8], and if adequate training is conducted, whilst the draft GSDP guidelines (2021) state that paper stock cards should be continued to be used at all times alongside other electronic inventory management systems. Secondly, guidance differs between supply and medical/pharma on if carrying out a partial inventory of stock should suffice, or if a full inventory should be conducted on a regular basis (whereby physical stock and what is recorded in the system is compared).
- Pharmacists have expressed their concern about stopping paper stock cards as a crucial tool to verify the possible discrepancy between the informatics and the physical stock, a policy which was said to be implemented without consultation. Similarly, concerns have been expressed about not conducting full physical inventories.
- Poor inventory management can lead to high discrepancies in stock, something that is observed in MSF projects. This in turn can lead to stock-outs, expiry, poor forecasts, lack of accountability and leakage.

> "Stock management is the bad apple. That is really contaminating and creating issues."
> – Key Informant

- MSF OCB is moving away from paper-based to electronic systems. A variety of systems are used in different MSF projects, which means staff may have to be retrained when moving to a new project.

> "Expats who have been in MSF a long time, they did a great time in the past, but they're not welcoming new technology, it is also tricky to work with these people."
> – Key Informant

[8] As shown in Section 3.1.2, this requirement is not met, i.e. stock discrepancy is significantly higher than 5%.

- Isystock capturing data at end-user level is not linked to Unifield. This means that the reports using Unifield as a basis (i.e., MMSR and DART) provide a picture of the stock situation at warehouse level, and not at end-user level. There may still be medicines or supplies available at the pharmacy for patients to take even though stocks have run out at warehouse level – or vice versa.
- A fair number of key informants expressed their concern about the quality of data in Unifield: the tool was described as not very user-friendly, requiring considerable training and thus prone to human error, and containing bugs that undermine reliability of data. Due to these limitations, Unifield as an inventory management system was said not to have full buy-in from the Medical or Logistics Department.
- Unifield is automatically linked to the DART system, but not to MMSR; consolidation of the latter was described as lengthy and complicated, and adds another risk of data errors while transferring.

> "If you don't know it [Unifield] it's a nightmare. But if you use it in a proper way, it's an amazing tool."
>
> – Key Informant

> "Other departments have developed these systems, but without taking into account the needs of E-pool (speed) but have taken into consideration accountability and other issues. Need for speed could be integrated in the system, Unifield is not used, but then we stay "naked," there is nothing."
>
> – Key Informant

Use

MSF uses strict protocols and standards to ensure patients receive quality care and treatment. These include the MSF Clinical Guidelines[9] and Guidelines on Essential Drugs[10]. It is unclear if all projects monitor rational use, but it was included as an indicator in the quarterly reports of Sierra Leone (and possibly in other missions or in other reports, for instance number of medicines per prescription).

Rational use of medicines includes the proper prescribing, dispensing and use of medicines and supplies by the patient. Though a very important part of the supply chain, it was not the focus of the current evaluation; it would need a separate study to review patient records and prescribing and dispensing behaviour at end-user levels in order to really assess the rational use of medicines and supplies provided by MSF in the projects. However, some observations can be made.

[9] https://medicalguidelines.msf.org/viewport/MG/en/guidelines-16681097.html
[10] https://medicalguidelines.msf.org/viewport/EssDr/english/essential-drugs-16682376.html

Observations:

- A number of interviewees said that though protocols exist, they were not convinced that these are actually followed: treatment given might be based on personal preferences and practices.

> "Expats they come and go. They do have other prescription behaviours."
> – Key Informant

Use of medicines and supplies not according to protocol may also result in shortages or overstock. Example given from Iraq was the specialist's preference for spinal instead of general anaesthesia, which in turn also resulted in stock-outs of specific anaesthetics; staff in DRC cited similar examples, leading to high overstock.

> "Rational use of medicines is difficult to follow-up on, since in the project where we're working the hours, we're able to do direct supervision and training of staff is reduced to 5 to 8 hours per week."
> – Key Informant

- The project in Sierra Leone actively monitors rational use and deploys interventions to (successfully) improve indicators. As reported in the quarterly report from Sierra Leone (September 2021), only 80 of the 111 children classified as pneumonia received and appropriate antibiotic according to the Integrated Management of Childhood Illnesses (IMCI) guidelines, whereas the proportion of antibiotics prescribed appropriately out of all antibiotics prescribed was 96% (target > 90%), up from 61% in Q1 and 74% in Q2. However, it is a positive sign that rational use is monitored, and measures are being taken to improve on it.

WHAT IS THE PERFORMANCE OF THE SUPPLY CHAIN? (EQ4)

There is **no clear framework** that monitors the performance of the MSF OCB supply chain end-to-end. There is no overall Logframe with targets or milestones, or clear means of verification. However, the performance of the supply chain is measured at different levels of the system, with the international segment much more developed than the local segment.

At international level, the MSF Dashboard combines data from the three ESCs (APU, Logistique and MSF Supply) and for all MSF OCs. The data going into the system include Unifield (through OCB), Extranet and from different software systems used by the other OCs.

Here, detailed information is collected, monitored and analysed over time, including on lead times, order lines, on-time delivery, ready to ship date, product type, order priority (routine, emergency), transport mode, value, weight, volume, country, project – and by ESC and OC. These data can then be further analysed, for instance top 10 by mode of transport, or top 6 country in terms of value of international orders.

The Dashboard has one clear key performance indicator with a target, namely ready to ship (RTS) date with more than 80% of orders on time. Figure 3 shows the performance of this indicator for MSF Supply to all projects (including but not limited to OCB[11]) between 2016 and 2021. This indicator only covers the step of the supply chain that is under the control of MSF Supply, i.e., from the time the order is submitted to the time the order is ready to ship to the country.

Figure 5 MSF Supply indicator on 'ready to ship' 2016-2021. Source: MSF Supply Dashboard

In addition, performance of the international segment of the supply chain is measured through the Supply Chain Executive Dashboard, a PowerBI platform that is populated with data by the three ESCs and the OCs. To be noted here is that the quality of the data, hence the accuracy of the dashboard, is questioned. An indicator monitored here is the lead time performance, which comprises the step included under RTS managed by MSF Supply, but also includes activities conducted by the mission before (order formulation, validation, and confirmation) and after the order is ready to ship (order transportation and reception in country)[12]. It hence covers the international and a (small) part of the supply chain at national level. This indicator shows that for OCB, 35% of orders is within lead time specified for the full process, with an average lead time of 166 days (data 2021).

Observations:

- The MSF Dashboard and the Supply Chain Executive Dashboard contain data from the three ESCs and five OCs, monitoring data with respect to the performance of the international part of the supply chain. However, there are questions about the reliability of data going into the system, and the lack of alignment on data and indicators between the different OCs and ESCs.
- As shown in Figure 3, the only indicator from the MSF Supply Dashboard which has a clear target – more than 80% ready to ship on time – has been achieved in 2020 and 2021. A fair amount of other data is collected, but due to an absence of indicators or targets set these cannot be assessed as being achieved or not.
- The Supply Chain Executive Dashboard also collects data on the supply chain within OCB, and shows that 35% of the orders for OCB in 2021 were on time (within specified lead time). Though

[11] Around 70% of all orders processed by MSF Supply are for OCB, hence this indicator can be regarded as relevant for OCB missions.

[12] The different steps are as follows: order formulation, validation, confirmation, preparation, documentation, pre-clearance, consolidation, transportation, and reception, of which preparation, documentation and pre-clearance is conducted by MSF Supply and includes 'RTS'.

not optimal, this performance is still significantly better than those of the other OCs, which reach a lead time performance between 10% (OCBA) and 26% (OCG). Average lead time in terms of days is also significantly shorter for OCB projects than for other OCs. The relatively better performance of OCB was said to be due to the high percentage of countries (69%) that have a service-level agreement with MSF Supply. No further information on this process was obtained for this evaluation.

At country level, the performance of the supply chain is monitored in a less straightforward manner. In 2014, OCB set up a programme to monitor supply chain indicators (mainly on stock management), but this was discontinued, reportedly as a result of a lack of feedback from mission countries.

However, at that point the monthly medical stock report (MMSR) was created, which includes indicators on a number of items and value of stock; ruptures and pre-ruptures, sleeping and overstock; expired, damaged and pre-expired[13] items. This Excel-based report is produced on a monthly basis, for each of the OCB projects, and uses Unifield as means of verification.

In addition, the Supply Chain Department started the DART project in 2019, and to date monitors the following three indicators, also with Unifield as means of verification:

- Stock evolution: Shows the value and the number of items in stock for MED, LOG, LIB (Library: catalogues & guidelines) products per year and per month, with breakdown by product group
- Stock Discrepancy: Shows data on physical stock counts per year and per month: number of items counted, number of items in discrepancies with value, indicators on discrepancy rate, absolute discrepancy value and discrepancy value. This is the only key performance indicator, with target set to <5%.
- Losses (percentage and value): Breakdown by type of losses (Expiries, damages, scrap, losses + Donations before expiries) and breakdown by product group.

Figure 4 below shows the average monthly stock value by year; medical stock reported through DART was on average €135m, compared to €22m for logistics items and €21k for library items. Figure 5 shows discrepancy by line item (from 20% to 17%) and by value (from 31% to 38%) over the past three years, averaged for the projects included into DART. Lastly, Figure 6 shows the percentage losses over the past years, going from 4.4% in 2019 to less than 1% in 2021.

[13] Products expiring within the next 9 months that will not be consumed.

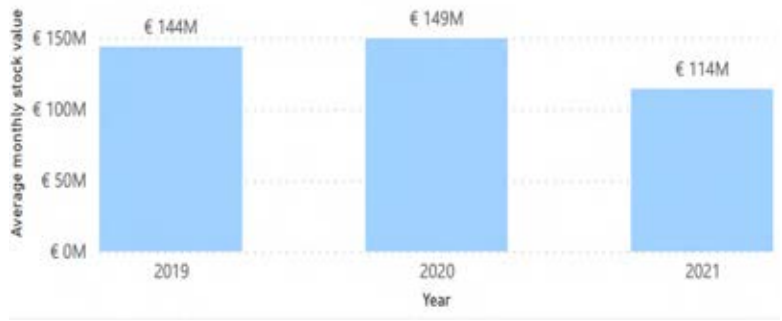


Figure 6 Average monthly stock value, by year, 2019-2021 (Source: DART project, yearly summary inventory management indicators (last synch date 09/10/2021)

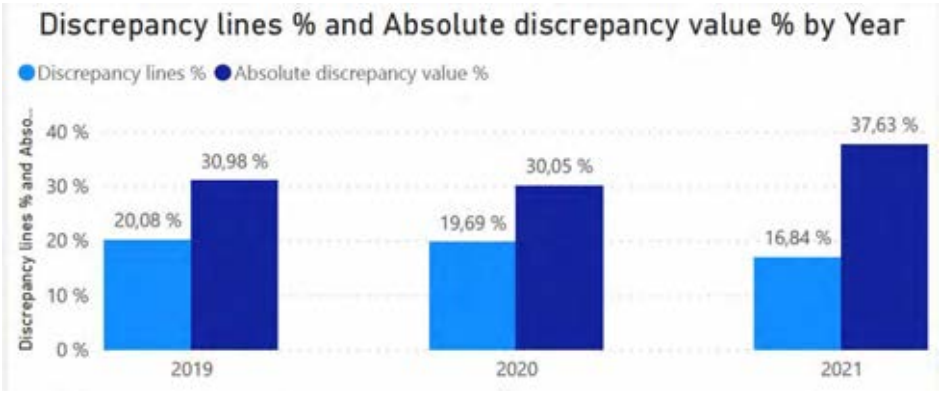


Figure 7 Discrepancy lines % and absolute discrepancy value % by year, 2019-2021 (Source: DART project, yearly summary inventory management indicators (last synch date 09/10/2021)

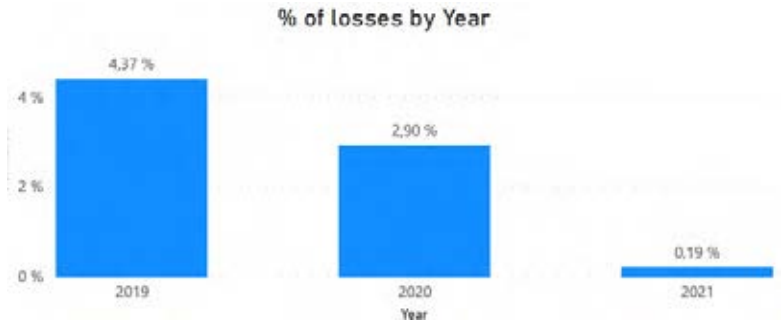


Figure 8 Percentage of losses by year, 2019-2021 (Source: DART project, yearly summary inventory management indicators (last synch date 09/10/2021)

Additional DART indicators are being developed and are expected to be launched in March 2022, and include Stock turnover, Sleeping stock, Overstock, Risk of expiry, Stock out, and Data quality reports.

During the country case studies, other ways of monitoring performance of the supply chain were encountered, including fill rate of orders from the pharmacy by the warehouse (Iraq); a list of 10 or 20 supply chain KPIs related to customs, transport, warehousing and purchasing (Sierra Leone); a report resembling the MMSR but containing slightly different information from DRC; the quarterly report

from Sierra Leone reporting on stock-outs of essential drugs and donated items at end-user level, indicators on rational use, and proportion of facilities with a functional cold chain; regular reports informing about overstock, sleeping stock, stockouts and expiration rates in Haiti.

Observations:

- At country level, there is not one clear framework that monitors the performance of the supply chain in a comprehensive manner, sets targets, or visualises the different indicators for evidence-based decision making. Rather, there are different monitoring systems in place – MMSR and DART being the most prominent – but it is not always clear what the means of verification are for these, or in what way these systems are used by the project to improve performance of the supply chain. MMSR was described as lacking user-friendliness, timeliness and as complex to make data operational, and DART as still under development so in the pilot phase.
- To the best of our knowledge, information from the MMSR can be found with the Supply Chain Officers in each of the Cells but is not compiled or analysed in a comprehensive manner, in a way that provides an overview of the stock status (including stock-outs and expiries) of all medicines and medical supplies in OCB projects.
- MMSRs from selected projects (i.e., Mosul in Iraq, Kenema in Sierra Leone; September 2021) and from DRC (January-October 2021) were obtained, and show relatively high levels of stock ruptures, overstock and sleeping stock, and low percentage of expired items.[14] In Haiti, although MMSRs were not obtained, some indicators could be analysed that showed a high level of overstock and sleeping stock, explained by the closure of one of the projects.
- MMSRs report high levels of sleeping stock: 68% in Mosul and 54% in Kenema, whilst in the DRC report it varies between 40-50% during 2021. It should be noted that sleeping stock also includes spare medical equipment (i.e., theatre lamps) which can quickly increase the percentage of sleeping stock in terms of both value and volume. Data on sleeping stock should therefore be analysed further before conclusions can be drawn. For example, biomedical equipment and spare parts may comprise the majority of sleeping stock while they actual function as a back-up of active equipment and are essential to be present in case of faulty or damages equipment.
- It is unclear how to interpret the DART indicator on average monthly stock value, or draw any conclusions based on the figures provided apart from the fact that medical items have a significantly higher average monthly stock value compared to logistics items as reported through DART. Stock discrepancies are significantly higher than the set target and show no sign of improvement over the past years. This performance target is therefore not achieved. The third DART indicator show losses are low and seem to have reduced over the past years, which is a positive sign.
- Means of verification for both MMSR and DART is Unifield. As mentioned before, Unifield reflects stock status at warehouse level, and hence does not capture the reality at facility or end-user level, or actual consumption data. This issue can be illustrated with the following example of disparities in data obtained from differences levels: the Mosul project reported a rupture in 18% of the items through the MMSR (September 2021). In the same month, 33% of order lines

[14] Stock rupture in Mosul: 18% and Kenema 6%; Overstock in Mosul has 29% and Kenema 30%; Sleeping stock in Mosul 68% and Kenema 54%; Expiry in Mosul 1,9% and Kenema 0,6%.

ordered by the project pharmacies to the warehouse could not be filled. In addition, quality of data reported through Unifield, as well as its user-friendliness, has been seriously questioned (see 'inventory management' above).

- Performance of the supply chain of the E-pool at country level is not measured; through Isystock is used for inventory management. To the best of our knowledge, these data are not further monitored for performance.

> "You cannot build a good pyramid that we have in place if the data are not there."
> – Key Informant

OCB SUPPLY CHAIN GOVERNANCE

HOW IS GOVERNANCE OF THE OCB SUPPLY CHAIN SET UP? (EQ2)

Very limited and fragmented information is available to describe the governance of the OCB supply chain, and information seems to be more specific regarding roles and responsibilities at country level than at headquarters, also as a result of adaptation of selected existing policies and guidelines. The role of the Supply Chain Department, in particular in its interaction with other departments, could benefit from clarification.

Establishment of the OCB Supply Chain Department

The end-to-end (E2E) reform started in 2012, with the aim of optimising the supply of OCB operations in terms of cost, services, and quality of products. Amongst many other things, one of its results was the **creation of a separate Supply Chain Department within OCB in 2017**, taking over the functions related to managing the supply chain itself, autonomously and yet in collaboration with all levels of the supply chain. The Department is also in charge of the strategy of the OCB supply chain. These functions had previously been located within the Logistics Department, with responsibilities shared between the international sections within MSF Supply, and the local section at country level. At the start of the E2E reform, these functions had been migrated to the Supply Unit within MSF Supply, which is the predecessor to the current Supply Chain Department. Following its creation, the **OCB Supply Chain Department was defined as a support department**, and its primary role is identified with meeting the needs of its "clients," the Operations, Medical, and Logistics[15] Departments. The End-to-End reform, and later on the creation of a dedicated Supply Chain Department resulted in the hiring

[15] While Logistics is also described as a support department in the OCB Operational Prospects 2020-2023, it still receives services from the Supply Chain Department.

of a large number of dedicated staff with professional supply chain background, necessary to populate the Department itself, but also positions within Cells and within country teams.

> "One of the major successes of the implementation of the supply chain department within OCB is to make understand people - medical log and all the other departments - that supply is a very important issue to ensure operations are correctly done. That is the biggest success story."
>
> – Key Informant

The 2016 evaluation of the internal customer perspectives on the E2E reform[16] highlighted a limited shared understanding of the E2E reform within OCB, and the need expressed by supply staff (Supply Chain Officers and Supply Coordinators (SupplyCos)) to have their roles clarified, in order to improve the collaboration with their internal" customers". The same evaluation already exposed challenges related to the use of the term "customer," as it positioned the Supply Chain Department in a role perceived somewhat differently from that of other departments providing crucial support to Operations, such as Finance. The Evaluation also already highlighted the need to "*adopt a continuous consultation approach to ensure that experiences in the field are translated into improvements of the supply function*."

Observations:

- Selected key informants reported how, in their views, the creation of the OCB Supply Chain Department was not followed by an in-depth strategisation and reflection process that would have served to clarify the role of the Department within OCB and its positioning vis-à-vis other departments, as well as to (re)define its mandate and ambitions. Other key informants mentioned that the role and added value of the OCB Supply Chain Department is yet unclear to them.
- A small number of key informants reported a tension between the main goals and ways of working of the Supply Chain Department and those of Operations, with the first striving for efficiency and optimisation in the use of resources, and the second placing greater emphasis on efficacy, adaptability, and reactivity to the specific contexts in which MSF operations take place. These two perspectives could and should be reconciled, promoting a reciprocal understanding of shared priorities, and identifying clear communication channels that enable an agreement on which aspects may need to prevail in a given circumstance.
- Many key informants reported about an overall lack of dialogue and communication at OCB HQ level, across Departments. This was however considered to be highly person-dependent, and the recent management changes at OCB (Directors for Medical and Supply Chain Departments) were regarded by many as a very positive fact, and as an opportunity to reinforce dialogue and collaboration across departments.

[16] Capitalisation of OCB Supply Unit "Customers", perspectives on the E2E reform. 2016.

Availability of Information on Supply Chain Governance

Overall, the governance of the supply chain of goods of MSF OCB appears unclear and fragmented, and this is particularly true at HQ level. The only available document describing roles and responsibilities at headquarters level was the RACI (Responsible, Accountable, Consulted, Informed) Governance OCB Supply Chain, which was however limited to describing the division of selected roles and responsibilities between the Supply Chain Department and MSF Supply. The 'OCB Who is who' shared with the evaluation team is not up to date, and it does not provide a description of the functions of the different OCB Departments. Lines of accountability and interactions between departments with regards to the functioning of the supply chain remain unclear, and none of the key informants interviewed could identify a source providing this information, with several key informants suggesting that no such document exists.

Greater level of detail is available regarding roles and responsibilities at other levels: the Regional Team for Central Africa (Cell 1) is in the process of developing a document outlining supply-related roles and responsibilities as they will be attributed to country-level teams, mission teams, and the regional support team, as a result of the implementation of the field recentralisation process. At country level, the case studies highlighted how documents providing a clear division of roles and responsibilities for processes related to the supply chain are being developed, such as the Supply Guidelines developed at Mission and Project level in DRC, and the Integration policy developed in 2019 in Iraq. Similarly, job descriptions provide an overview of the key functions of each staff member at project level, as well as key lines of accountability. A Field RACI is also available for supply, focussing on the allocation of tasks between supply staff and other departments at mission level, with very limited information available on the interaction between mission and project.

Observation:

- While adaptation of policies and guidelines is taking place at country level, these documents are often not known by relevant staff, and they are not always followed. This was also corroborated by findings of the DRC, Haiti and Iraq case studies.

> "All I know about the supply chain; I have learned from experience. In all the MSF missions I have been working for, I never received a briefing describing how the supply chain works."
>
> – Key Informant

The *Integration of medical stock policy* is regarded by some key informants as the main document providing governance guidelines for the overall OCB supply chain. It was first drafted in 2009, and then revised and approved by the Directors of the Operations, Medical and Supply Chain Departments in 2014, halfway through the E2E reform. This policy has the aim of "*delegating the structural and administrative management of medical stocks to the supply department who acquires the function of "manager" of the stock. The strategic management still lies with the operational medical line who remains the "owner "of the stock."* Importantly, the integration policy states that this division of labour is also applicable to logistic, emergency preparedness (EPREP) and food items at coordination and project level. While on the one hand the Integration policy had as an outcome that of freeing medical and pharma staff from stock management responsibilities and allowing for additional time to be

dedicated to patient care, on the other its implementation has presented several challenges, as described in the next section.

According to the OCB Supply Chain Vision 2020-2023, "*The OCB Supply Chain is composed of: the Supply Chain Department created in 2017 (MSF OCB HQ – Brussels), MSF Supply (Neder-Over-Heembeek), KSU (Kenya Supply Unit) (Kenya), - Supply chain teams at coordination and project level*." However, as already described in Section Supply **Chain Set up** above, a range of other actors, from HQ to project level, are involved in all steps of the supply chain of goods for OCB. Just as the Supply Chain Vision does not fully acknowledge the role of other departments in the management and running of the supply chain of goods, the same is true in the opposite sense: the operational prospects, strategic documents from other departments, as well as the recentralisation roadmap, make very limited mention of the Supply Chain Department or of the role of supply in the running of MSF OCB operations, failing to recognise the centrality of a functioning supply chain in the overall performance of an organisation such as MSF.

Limited factual elements could be retrieved regarding the governance of the OCB Supply Chain through document review and key informant interviews. These are presented in this summary box, which by no means has the ambition of being exhaustive, also considering the multiplicity of activities, processes and tasks which were not covered in the available sources, nor were at the core of this evaluation. The Supply Chain Department has a normative and support role within the OCB supply chain, and it hosts a global procurement team, which is responsible for goods and services. The procurement team hosts staff based in OCB HQ, two regional procurement managers, and tactical buyers within MSF Supply. The Supply Chain Director reports to the General Director, is part of the Executive Supply chain Committee, which is cross-sectional and brings together Directors from different OCs and ESCs. The Supply Chain Department is overall responsible for ensuring that medical products are delivered to missions following the correct transport and storage conditions (e. g. cold chain), based on the norms on quality of medical products identified by the Medical Director and Section Pharmacist. Cells are involved in the validation of orders, according to their value, and provide technical support to staff based in countries. The E-pool does not currently include Supply staff; however, this is bound to change in the near future with the inclusion of a supply and a pharmacist role. The E-pool is not currently implementing the medical integration policy. MSF Supply works at intersectional level, though with OCB as a primary customer. MSF Supply General Manager reports to the OCB Supply Chain Director. The KSU works at intersectional level and is in charge of providing primarily logistics supplies to missions and projects in the region. The KSU General Manager also reports to the OCB Supply Chain Director. At country level, collaboration between mission and project, and between staff employed by all departments is crucial to the good functioning of the supply chain, and of operations more in general.

The SNA carried out confirms that a significant set of supply-related exchanges take place at Mission level, as represented in Figure 7 below. In this figure, we have highlighted in blue the reciprocated exchanges, which is to say the interactions between network members that were confirmed and rated by both parties involved. As per the SNA analysis, three key actors take a more central role, bridging connections among others and across departments, and creating a closely-knit subset of the network: these are Mission Supply, Mission Pharma and MSF Supply. The OCB Supply Chain Department is also a central actor in the network, however its connections to others were reciprocated to a small extent, indicating a possible disconnect from country-level operations. Other HQ departments, as well as Project level staff and the KSU are reported as being more marginal in the supply chain network, connecting primarily with actors from their own departments. The full SNA analysis is presented in greater detail in Annex D.

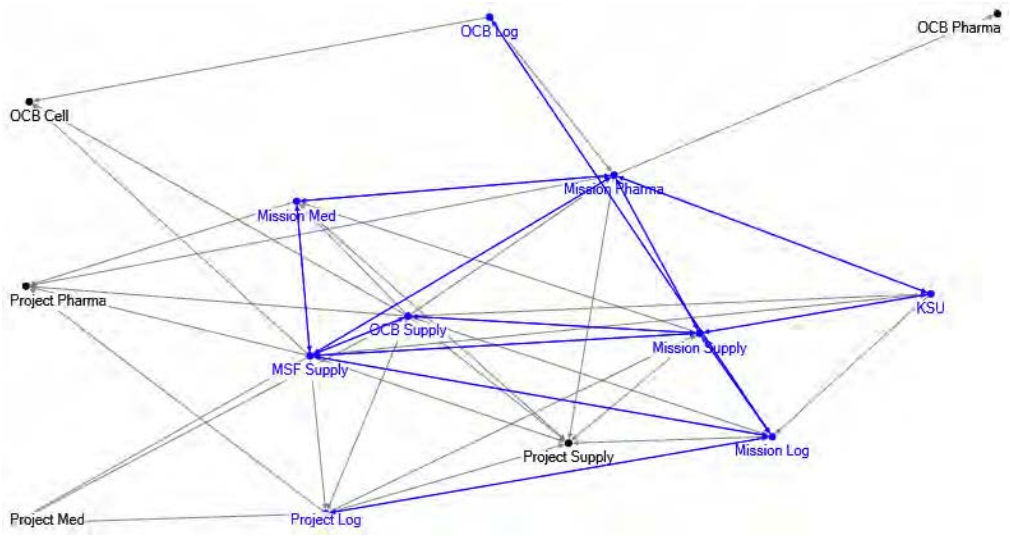


Figure 9 Visual representation of the OCB supply chain network, SNA

Perceived Lack of Clarity in Governance

While intersectional approaches are being promoted and increasingly implemented, some key informants reported that in reality there is limited willingness and interest for the different OCs to work in a cooperative way, and this is said to negatively impact the governance and functioning of the ESCC. These concerns also apply to the development of new initiatives such as the Eastern Africa Supply Network, which will have an intersectional nature, and whose exact management structure and accountability lines appear unclear. In terms of rationalisation of the supply chain, one key informant noted how the existing duplication of functions between MSF Supply and Logistique is not likely to be addressed nor resolved as the two ESC "belong" to different Ocs, who have invested heavily in their development.

> "Governance is like a paradox, there is a will to work together, but it's a bit lie when you come to operational risks and decisions to take. They do not want to do it really. The supply community is really in between the two axes: work together for better international supply vs. work for your own OCs."
>
> – Key Informant

Other observations were related to the interaction between MSF Supply and the Supply Chain Department. In this respect, roles and responsibilities are reported to be clear, with MSF Supply having responsibility from the reception of the international request to the delivery of the goods in the port of entry. Some stakeholders however mentioned a lack of proper communication and engagement between the Department and the ESC, with MSF Supply increasingly taking a more operational role in support of the country-level colleagues for example on customs, warehousing, expedition and purchasing, as well as in mission-level strategy development. In a number of interviews, the distinction between the Supply Chain Department and MSF Supply seemed blurred, with one HQ key informant having only recently come to know that they are separate entities.

In summary, governance of the OCB supply chain appears fragmented, unclear, and poorly documented, in particular at HQ level. While few documents are available, these focus on segments of the supply chain and on processes, while an overview of the entire supply chain is not available, including the roles of all departments involved. Some challenges in the definitions and wide dissemination of a clear set of roles and responsibilities for different actors have been persisting for several years and should be addressed in a consultative way.

HOW EFFECTIVE IS THE GOVERNANCE OF THE SUPPLY CHAIN? (EQ5)

Effective governance of the OCB supply chain is hampered by limited clarity of the role of the Supply Chain Department, partial agreement on the implementation of governance guidelines, and limited collaboration. Interpersonal relations impact governance both positively and negatively at different levels, and opportunities for improvement are apparent.

Role of The Supply Chain Department

The 2020-2023 OCB Supply Chain Vision states that roles and responsibilities internal to the OCB supply chain need to be discussed and rethought: "*While a strong push was given when the Supply Chain Department was established, our organisational set-up must evolve to keep up with change. Internal organisation must be rethought, but also our scope in some cases, as for example the management of supply activities in headquarters. In parallel, risk management and performance management will require the question of governance to be raised."* The creation of a separate Supply Chain Department was perceived by some as a top-down initiative, which was implemented without consulting and involving other departments.

As already mentioned in the previous section, some key informants shared the perception that the Supply Chain Department is yet to find and clarify its role within OCB. This has to be done navigating the tension between being responsible for the supply chain and implementing adequate technical solutions, shared responsibilities, and a support role that is interpreted by some in a reductive way. While data collection processes focussed on the supply chain as a whole, and with the intent of exploring its complexity and interactions, most respondents referred exclusively to the Supply Chain Department.

Some key informants suggested that there has generally been a lack of strategic vision for the OCB supply chain, along with limited managerial courage, with initiatives being implemented in isolation, without being based on an in-depth analysis and on a clear strategy. Others considered that

governance issues pertain to OCB as a whole, considering that the Operations Department may be playing too marginal a role in clearly defining what is needed from other Departments in support of the smooth running of operations, including by establishing roles and responsibilities as needed. As one key informant put it, *"MSF works very much with the coffee machine,"* referring to the fact that agreement is often reached on an interpersonal and informal basis, rather than through written policies and procedures which may be perceived as being imposed.

A Professional Supply Chain Working in Silo

Some key informants consider that the professionalisation of the supply chain and the related hiring of a large number of supply staff was disproportionate, with a perception that the OCB supply chain grew too quickly and separately from other departments, leading to the creation of an additional silo within OCB. A small number of key informants consider that Supply staff does not have the adequate professional background to manage medical socks. Other key informants and in particular those at country level, have a very different perception, and consider the professionalisation of the supply chain functions as a major added value of OCB as compared to other Ocs. They suggest that the handling of supply functions by dedicated and trained staff results in better service being provided to the Missions and Projects, and this was confirmed by some survey respondents.

Many considered that the Supply Chain Department has been working in isolation, developing solutions without requesting the involvement of clients, and taking a very technical and supply-oriented approach to matters that are relevant for other departments. Selected key informants referred to a lack of consultation in the way Supply staff performs their role, for example though the development of tools that are not user-friendly for non-supply staff, limited information shared on changing delivery dates for orders, or on the management of contracts with logistics suppliers.

> "It's important that the supply chain department needs to understand that the supply chain doesn't belong to them uniquely. That is the issue. It's very territorial, "we're in charge". I work, I do everything alone, and then I show to you."
>
> – Key Informant

Many suggested that a more collaborative inter-departmental approach, from HQ to project level, would go a long way in improving governance, staff satisfaction, and in turn performance of the supply chain.

The Iraq case study illustrates how the (re)establishment of monthly meetings between supply and medical/pharma colleagues, as well as "guesthouse meetings" that bring together key staff from the medical department to regularly discuss data provided by supply colleagues and agree on needs for international orders are already bringing some improvements in the performance of the supply chain (see Box in Section on Design).

Bottlenecks to Effective Collaboration between Departments

The major bottleneck to constructive collaboration within the supply chain results from an ongoing tension between the Medical (and in particular Pharma) and Supply Chain Departments regarding stock management. While the 2014 Integration policy assigned stock management functions to the Supply Chain Department, there is apparently still a lack of clarity, agreement and acceptance of roles and responsibilities on this matter. For example, in Iraq, the adapted Integration policy was only developed in 2019[17].

> "There is no complete agreement. There is no complete clarity on who should manage the stock or not. Ownership for some means that the medical person should be able to decide on the priority of dispensing, not only at the pharmacy or end user unit, but also in the central stock that you need a medical person, or the owner of the stock. You need to be able to define the process of dispatching some of the things."
>
> – Key Informant

Other points that lead to disagreement between Supply and Pharma staff are related to the GSDP guidelines and the need to have distribution pharmacies at country level. Tensions appear to be addressed through reciprocal blaming rather than through dialogue and identification of common solutions. OCB is aware of this issue, to the point that the poor interaction between Pharma and Supply staff has led the Directors of the Medical and Supply Chain Departments to jointly commission a study on" Pharma-Supply ways of working analysis" in 2021. In November 2021, a "Medical/Supply Management Team" has been created, comprising Directors of the Medical and Supply Chain Departments, OCB Pharma and the Supply Chain Front Desk Coordinator. The Team is meeting regularly with the aim of rebuilding trust between the two communities and fostering collaboration, transversality, and inclusion.

This persisting tension has been reported as leading to a high level of burnout among staff, particularly at headquarters, but also as an issue that was to a large extent person dependent. What appears very clearly is that there is limited dialogue and openness in the interactions around some issues between these departments, and a collaborative approach is needed to resolve this outstanding bottleneck. On the other hand, HQ staff from the Medical Department reported that the two Departments collaborate very well with regards to customs clearance, transport of goods, and procurement, respecting each other's professions and expertise.

> "Most of the interactions with the supply department are positive, it's really this 20% that burns people, and that has the attention of everybody. 80% of our interactions are positive, professional, mature, and we have all the outcomes of it."
>
> – Key Informant

17 One possible reason for the late development of an adapted integration policy is due to the long time needed transitioning from the initial emergency setup of projects, in which the integration policy is not implemented as per e-pool's ways of working, to the "regular" approach.

Collaboration at Country Level

Aside from the stock management issue, several key informants reported that constructive collaboration takes place at country level, as staff from different departments works closely together with the aim of delivering project objectives, and in a good spirit of teamwork, supporting each other and looking for practical, shared solutions to challenges encountered. Confirming this perspective, the social network analysis showed that interactions in the OCB supply chain are rated very positively in terms of quality, usefulness, and timeliness, and in particular those taking place with Mission and Project staff. On the other hand, many key informants also reported that collaboration and interaction at country level is based on personality and on how well individuals can interact. The high turnover of staff has been cited by many as a key reason behind challenges in implementation, as a change in (international) staff would typically result in the new person implementing processes in ways that are often not in line with existing policies and guidelines, as already described under Supply Chain Design.

In general terms, roles and responsibilities would appear to be clearer at country level than at HQ, as exemplified by the clear task division presented in the Field RACI, as well as in country adaptation of policies (Iraq medical integration policies) and guidelines (DRC Mission and Project level guidelines, R&R summary document). Most survey respondents indicated their own roles and responsibilities to be clear (67%) or somewhat clear (29%); and that established reporting and communication lines were clear (87%) or somewhat clear (13%). In the survey, governance was not included amongst the most relevant factors impacting the supply chain (neither positively nor negatively). SNA respondents also found supply chain procedures to be clear and feasible, and that roles and responsibilities are allocated clearly within teams and between HQ and country. They did, however, find that allocation of responsibilities across departments represents a challenge to supply chain performance (e.g., stock management), and that communication lines are not entirely clear within the supply chain, being identified at the same time as main strength and challenge to its performance.

In summary, the OCB supply chain governance is only partially effective, with a lack of communication and collaboration across departments, in particular on outstanding questions related to stock management. Roles and responsibilities are generally clear at country level, but their implementation and the overall interaction is largely person dependent. While the creation of the OCB Supply Chain Department and the consequent professionalisation of the supply chain have resulted in perceived better performance, the Supply Chain Department may be operating in isolation, and is perceived by some as lacking strategic vision. Also, as a result of recent management changes at OCB, initiatives are being put in place to resolve existing tensions and foster collaboration across departments.

OCB SUPPLY CHAIN STRATEGY

WHAT IS THE STRATEGY GUIDING THE OCB SUPPLY CHAIN? (EQ3)

In 2017, the OCB supply chain evolved with the creation of the Supply Chain Department with the objective to get closer to the operations and OCB in general. The first OCB supply chain strategy (2018-2020) was developed based on a participatory process that engaged the supply staff at HQ and country level. This process included multiple workshops, evaluation of the results of a satisfaction survey conducted by the Stockholm Evaluation Unit and the latest 3D Field Quality Project run by the Operations Department. The Framework for Action underpinning the strategy consisted of four dimensions – Reliability, Proactivity, Rapidity and Reactivity – and was used to establish nine strategic

objectives, spread across the four dimensions. The objectives were said to be specific enough to enable their achievement to be measured by the end of 2020 and should be seen as ultimate targets to be reached through the programmes and priorities defined for the years to come. The strategy outlined six key programmes to be deployed to achieve the targets: 1) end-to-end performance, 2) coherent, reliable, and interoperable processes, 3) knowledge management, 4) collaboration framework with supply, 5) organisational set-up, and 6) human resources.

Subsequently, the supply chain strategy 2020-2023 was launched. It should be noted here that this strategy is not the supply chain but rather the Supply Chain Department strategy. To illustrate this, the 2020-2023 strategy describes the OCB supply chain as comprising the Supply Chain Department (created in 2017), MSF Supply, Kenya Supply Unit, and supply chain teams at coordination and project level (i.e., SupplyCo and Supply staff in the project). It does hence not include all supply chain activities carried out by medical and logistics staff, by operations, the Cells, or the E-pool.

The Supply Chain Department strategy

As stated in the OCB Supply Chain Vision 2020-2023, the first area of focus of the OCB Supply Chain remains country-level operations. Main efforts are made to provide adapted solutions. These efforts are deployed along with other departments, with the final aim to ensure that appropriate operations are carried out, be it an emergency or a regular context. Depending on their nature, the right balance is sought between OCB's key attributes (reliability, proactivity, rapidity, reactivity). The second area of focus is accountability, divided in two main objectives: efficient and transparent use of resources, and sustainability (economic, social and environmental).

The objectives as per 2020-2023 strategy are formulated as follows. The OCB supply chain…

- provides adapted solutions, in an emergency or regular context;
- achieves the right balance between key attributes: reliability, proactivity, rapidity, reactivity;
- ensures an efficient use of resources: maintaining high quality while reducing the cost;
- ensures transparency by mitigating the risk of fraud, corruption and misuse of resources;
- seriously addresses economic, social, and environmental sustainability (including climate change, financial viability of operations, ethical considerations of practices); and
- carefully considers the trade-offs between cost, service, and sustainability of the supply chain.

To reach these general objectives, improvements are sought in six main domains: knowledge management, performance management, supply chain integration, global network design, strategic procurement and risk management. Three key areas identified to enable these improvements are

- **Human capital**: mobility, recruitment, retention and learning & development – training of supply chain department staff and those involved in supply chain;
- **Information capital**: data quality, forecasting, operational scenarios, internal & external context analysis, information systems (data quality, operationalisation, use of reporting; and performance management) – *the supply chain will strive to create a performance management*

system that is gradually scalable, connected with our future integrated supply tools but also with other existing data sources and using information in almost real time; and

- **Organisational capital:** teamwork, alignment, culture of leadership. Multi-disciplinary approach within and beyond the OCB supply chain, in line with OCB operational prospects and strategic orientations*. In this respect, the OCB Supply Chain will seek to highlight areas where its added value can be leveraged in a better way. It will also seek to maximise its involvement in transversal projects and to promote project management convergences across the organisation.* Raising awareness of the added value brought by an expert intervention (especially Procurement), pooling of purchases, internal roles and responsibilities, community of practice (knowledge management).

Figure 8 below shows the map of the supply chain strategy, including focus areas linked to country-level operations and accountability, processes to improve, and capabilities to develop. The Supply Chain Department has made a proposed list around a strategic indicator dashboard as a first attempt to monitor progress in the different domains (*draft* version).

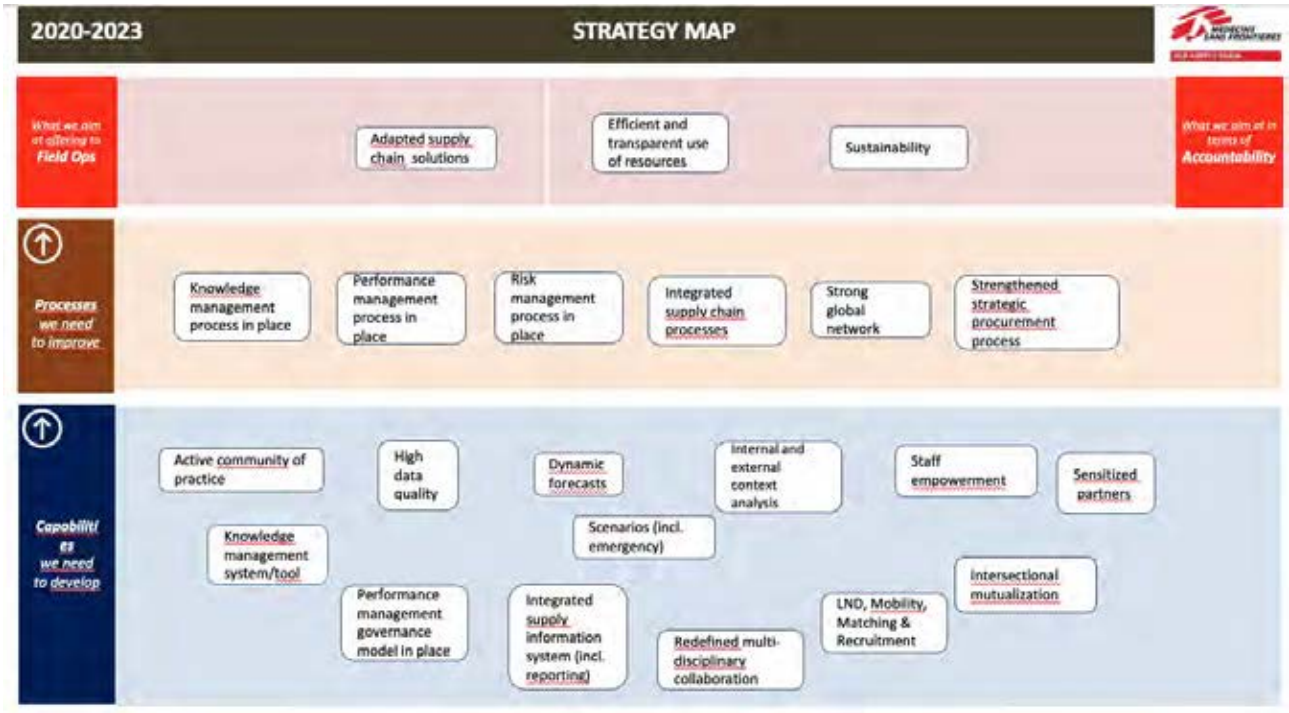


Figure 10 OCB supply strategy map 2020-2023 (Source: Bilan objective presentation OCBSC 02122020)

The six focus areas for 2021 have been identified as organisational set-up, structured communication, interdepartmental collaboration, intersection collaboration, performance management, and HR and Learning & Development (L&D). Here, important activities under each focus area are mentioned, including more interaction with the E-pool, focus on internal communication and improvement of data quality.

The overall key attributes of reliability, proactivity, rapidity, and reactivity of the new supply chain strategy 2020-2023 are the same as the ones included in the previous strategy. However, the new strategy has a different focus in terms of programme areas – only knowledge management is the same

– and the three key areas to enable the improvements – human, information, and organisational capital – are newly identified.

Other Departments' Strategy on The Supply Chain

The strategy paper of the OCB Medical Department 2020-2023 makes little to no reference to the supply chain. For instance, in roles and responsibilities no mention is made of the role of the pharmacist in assuring quality of products throughout the supply chain or ensuring good pharmacy practices, whilst passing reference is made to providing medicines and tools to meet the different health needs, and no mention of monitoring or improving the rational use of medicine.

Similarly, the OCB Logs in Operations (2020-2023 orientations) which includes a section on the Log strategy 2020-2023 mentions "*Let us strengthen on a day-to-day basis our collaboration with the supply department. Let us be allies to overcome the increased difficulties in terms of access and to better define products and processes to effectively develop solutions. We want to become real partners and seek alignment in our modus operandi"* but without further detail on how this should be done, or how this will ensure that the right goods at the right time for the right cost are delivered to the projects.

The OCB Operational prospect 2020-2023 and strategic orientation are discussed further in Section 3.5. We are not aware of a separate strategy of the E-pool which may make reference to the supply chain.

Overall, there is no overarching strategy guiding the OCB supply chain. The strategy currently in place is the Supply Chain Department strategy, which covers part – but not all – of the supply chain. Strategies by other relevant departments make little to no reference to supply chain functions, as already mentioned earlier in this report. Overall, there seems to be some level of disconnect between the actual relevance of the supply chain and its level of recognition within OCB.

IS THE STRATEGY RELEVANT TO THE OCB SUPPLY CHAIN? (EQ6)

With respect to the Supply Chain (Department) strategy 2020-2023, the Supply Chain Bilan 2020-2021 reported that: *the majority of the objectives fit into the overall strategy.* Here, the six focus areas of improvement as included in the supply chain strategy are highlighted and linked to examples from mission countries. For instance, the area of the global supply chain network, the case of India is referenced where explorations are ongoing for the set-up of a regional supply network, and in Egypt initiatives are underway to develop a network and collaboration with other international NGOs and authorities.

Matching the different focus areas for 2021 with the original strategy (focus areas, objectives, six domains for improvement, three key areas to enable improvements), and with the strategy map (country-level operations & accountability, processes to improve, capabilities to develop) is not very straightforward, as a number of different sub-divisions and different terminology is used. This makes the strategy and related activities less well-defined, and it is thus more difficult to identify key areas of focus.

Key areas identified in the strategy and focus areas for 2021 are in line with and responding to observations made through this evaluation, which – in the evaluators' view – would make them relevant to the OCB supply chain.

It is however not clear how the current strategy was developed and how priority areas were defined, i.e., through a participatory process, and/or based on an assessment or other. To the best of our knowledge, no evaluation of the 2018-2020 supply chain strategy was conducted to inform the new strategy.

Key informants mentioned that the supply chain strategy – as well we Bilan updates – was developed by the Supply Chain Department, with very little input by or involvement from other stakeholders in the supply chain, i.e., Operations, E-pool, Medical or Logistics Department.

"One of the clear examples is the Bilan and objectives of the supply within ops. We were informed just a couple of days upfront, which didn't enable most of the important interlocutors to participate with a constructive, critical contribution" – key informant

At country level, few key informants and only 21% of the survey respondents confirmed they were familiar with the supply chain strategy 2020-2023 (62% were not and 17% somewhat familiar). Overall, the strategy was regarded as 'very far from the field', an HQ document.

> "The supply chain strategy 2020-23 was done inside a silo. The supply vision is "we have a problem we find a solution."
>
> – Key Informant

In summary, key areas are identified in the strategy of the OCB Supply Chain Department which are relevant to OCB supply chain, though this strategy could be further simplified. The fact that there is very little ownership of the strategy beyond the Supply Chain Department hampers effective implementation.

As already noted under governance, the different Departments and key actors involved in OCB's supply chain have developed strategic documents with very limited acknowledgement of each other's roles and involvement in supply chain functions.

At the same time, there is no comprehensive strategy nor policy document guiding the OCB supply chain, defining its vision, laying out the road for OCB towards ensuring that the right quality product, in the right quantities, and in the right condition is delivered to the right place, at the right time, for the right price and to the right patient. Such strategy could be spearheaded by the Supply Chain Department but would need to be developed, implemented, and monitored in close collaboration with the Medical and Logistics Departments, and benefit from substantial input by Operations and the E-pool. Such policy or strategy could then serve as a reference in the development of future departmental strategies for all departments involved in the OCB supply chain, in such a way that respective roles and interactions are acknowledged and clarified across the organisation.

THE OCB OPERATIONAL ENVIRONMENT

WHAT ARE KEY ELEMENTS OF THE INTERNAL OPERATIONAL ENVIRONMENT? (EQ7)

Overall, in recent decades, OCB has evolved towards more complex projects with higher standards and a wider range of (more specialised) activities included. This tendency has had consequences: more (and more specialised) staff is needed, management complexity has increased, and operational flexibility has decreased.

When asked about the key elements of the internal operational environment within OCB, key informants mentioned a variety of developments occurring at different levels. The key ones that surfaced were regionalisation, field recentralisation and human resources. Of course, these by no means provide a full overview of the main developments, but are important ones highlighted for the sake of the current supply chain evaluation; Bilans and other operational updates provide a more comprehensive overview.

Regionalisation

As laid out in the position paper 'Towards a Networked OC' (July 2020), OCB aims to be an OC that is "networked globally, rooted in regional knowledge that is made available globally, actively linked to the wider movement and always with the patient and the medical humanitarian act at the centre of our work". The main purpose of regionalisation is to bring management positions closer to where operations happen. In addition, OCB wants to proactively link to other OC initiatives, creating a network of Operational Hubs/Operational Support Units that serve more than one OC. The Hubs or Support Units are or will be constructed according to different models in South Africa, Hong-Kong, Brazil, Lebanon, Italy, Kenya, Indonesia, and Central Africa. These hubs can have different competencies and activities, such as: innovative operational support models, which allow for country-level projects to take greater ownership (Field recentralisation), regionally focused E-response capacities, Medical/Technical Expertise, Advocacy, Supply, and others. In the future OCB could envisage building centres of expertise that can be non-medical, e.g., technical logistics.

Recentralisation

As described in the OCB Recentralisation Roadmap proposal (December 2018), since its creation MSF developed its operational support by concentrating experience and expertise mainly at HQ. This forced mission countries to depend more on HQ, for daily decision-making or for the implementation of the projects activities and various policies. The aim of Recentralisation Project, which started in December 2018, is "*to re-balance the organisation's centre of gravity by giving the field back the ability to regain autonomy and by redefining the scope of responsibilities of the projects"*. It consists of four main pillars: 1) giving the Project Coordinator or PMR strategic decision-making authority within their project environment; 2) changing the role of the country coordination as representation and support office; 3) putting the Cell/hub strategic partner closer to the operational reality, and 4) reducing the HQ direct operational support. Indeed, the role of the HQ becomes refocusing in norm-setting and policy making, maintaining overall coherence of the operational portfolio[18]. The implementation of the

[18] Recentralisation Roadmap proposal - December 2018

Recentralisation Project is resulting in new roles being developed and changes in processes, including for HQ.

Human Resources

Overall, there is a high staff turnover in all MSF OCB missions, impacting supply activities. Due to the nature and intensity of the work and the contexts where the operations take place, where high levels of stress, fatigue and burnout are common, internationally recruited positions don't often hold long-term contracts. The average length of these contracts is 6 months for project staff and between 9 and 12 months for coordination staff. When a new person arrives to a certain position, he or she brings new experiences and ideas, but at the same time continuity is challenged and some information is inevitably lost. Moreover, the fact that locally recruited staff don't usually occupy coordination positions reinforces this lack of continuity, although, in some occasions these national staff are the ones who keep record of the information and help international staff to get acquainted when they arrive to a new position. In some missions, certain positions have been nationalised, something that is generally perceived very positively. However, others feel that the missions should better involve this national staff in the development and follow-up of supply chain policies and strategies. Also related to the turnover of staff, almost all missions suffer from gaps in internationally recruited positions, resulting from a lack of available experienced staff or from early end of missions, for example, due to resignations. In fact, some informants mentioned resignations as an issue affecting all departments in OCB, although it has been reported that some profiles, such as pharmacists, have higher resignation rates than others.

> "We also need to think of sustainability. All linked to turnover, national staff… everything gets lost…the next person will come and all that we've done will disappear."
> – Key Informant

WHAT ARE KEY ELEMENTS OF THE EXTERNAL OPERATIONAL ENVIRONMENT? (EQ8)

Similar to the internal operational environment, key informants mentioned a wide range of external issues affecting OCB operations, of which a select few resurfaced throughout the interviews. These were the more complex environment OCB works in with respect to **difficult importation of goods**, in particular of medicines; **climate change**; **Covid-19** and future epi/pandemics; and other ongoing challenges.

Importation Difficulties

The establishment and strengthening of National Regulatory Authorities (NRAs) in mission countries is a positive development and implies that there is a regulatory body ensuring that all products used in the country are evaluated properly and meet standards of quality, safety, and efficacy. For OCB and its

> "We used to be MSF cowboys taking bags of medicines across the border. Now there are specialised supplies, import procedures, paperwork, bureaucracy. It's a new reality."
> – Key Informant

model of import from ESCs, this implies more complex, bureaucratic, and lengthy processes and procedures (which can be further hampered by corruption), and can easily translate into longer lead times, or even imposing import bans. For instance, in Iraq, lead times increased from 6 to 9 months for international medical orders, partially due to difficult import procedures. As a result, the mission is looking more and more towards local purchase.

Some respondents also mentioned that a regularly updated Memorandum of Understanding and established agreements and 'friendly contacts' with country authorities can help with facilitating import.

> "We achieved very good things, for example, through advocacy with Head of Mission we discussed with Ministry of Finance, and we explained our difficulties, from that meeting we reduced our lead time."
>
> – Key Informant

In addition, the move of mission country governments to introduce (more) import taxes has added another layer of bureaucracy and requires the mission to apply for tax exemption. In Haiti, tax exemptions for import of medical products have recently been waived, which has facilitated import for this OCB mission. In DRC however, the NRA recently released a list[19] of 35 medicines that "*can be locally produced with guaranteed QA mechanisms*". The MoH has banned the import of such medicines for the next 36 months in order to encourage local manufacturing. Among those are paracetamol, metronidazole and amoxicillin, medicines commonly used in MSF projects.[20]

Prepared kits are also more difficult to be imported because they contain a mix of products that can or cannot be exempt for taxes, sometimes contain regulated items that need specific documentation or bureaucracy, or items that are not registered in the country and therefore cannot be imported at all.

> "In the past, importation constraints have not been a problem, but this has increased quite heavily, which makes our life very difficult. It is amazingly complex where we work – 30 contexts, all contexts have different rules, you would understand very quickly that we do an amazing job."
>
> – Key Informant

Climate Change

Another important external element is climate change: more and more natural disasters will cause population displacements and conflict, increasing humanitarian needs and the need for large-scale

[19] Arrete Ministeriel nº1250 du 25 Oct 2021 portant suspension temporaire des importations de certains medicaments en Republique Democratique du Congo

[20] Update mid December 2021: with negotiation MSF just got the renewal of a derogation for the next 6 months

humanitarian responses, especially in the Global South. For OCB, this implies that the E-Pool will play an ever increasingly important role over the coming years.

At the same time, the importance for OCB to tackle – and be seen to tackle – climate change was highlighted, for instance, through focusing on reducing the carbon footprint of its modes of transport (air vs. sea).

Covid-19 and Future Pandemics

The current ongoing Covid-19 pandemic has brought to light weaknesses in global procurement and distribution processes, affecting supply chains globally, including the OCB supply chain. The pandemic has had a high impact on the mobility of persons and goods. At the start of the pandemic, acute restrictions and lockdowns created urgent situations like border closing, shortages of certain products related to fighting the pandemic like personal protective equipment (PPE) and oxygen, increased competition between actors (including between different OCs) and increased prices. This also highlighted the importance of diversifying sources and improving knowledge of markets. The Covid-19 pandemic showed that supply chain resilience and risk management is more important than ever.

Ongoing challenges in mission countries include

- Poor infrastructure: transport infrastructure –the quality of roads and the possibility of air/boat shipment are factors with a direct impact on the supply chain planning, especially affecting lead times and the regularity of orders
- Insecurity: issues of insecurity in a number of contexts result in the need to use transport by plane instead of by sea or road. In some cases, shipments need to be delayed and lead times to the projects become longer than expected; projects risk facing stockouts that result into the quality of care provided. Insecurity can also be a consequence of this stockouts if local acceptance and perception of the MSF activities are negatively affected by the lack of medicines.
- Economic issues include inflation, oscillation of exchange rates and non-reliable banking systems that especially affect local procurement.

IS THE OCB SUPPLY CHAIN ADAPTED TO THE INTERNAL AND EXTERNAL OPERATIONAL ENVIRONMENT? (EQ9)

A number of different supply chain initiatives are underway that directly or indirectly respond to key elements in the operational environment as highlighted above. These include sourcing closer to (projects) home, increasing intersectional collaboration, and investing in human resources, which demonstrate that the supply chain – at least to some extent – is adapting to the environment. At the same time, more needs to happen for the supply chain to adequately respond to the internal and external operational environment, underscoring, amongst others, the importance of OCB to conduct critical analyses in order to proactively respond to the rapidly changing operational environment.

Diversifying sources and sourcing closer to ‘home’Some products needed by the missions are difficult to source by ESCs and face ruptures more regularly. These items are analysed and included in a “Priority List” issued by the International Office. On top of that, there are 82 products on this priority

list for which only there is one single supplier. As this has been identified as a risky situation, a pilot project called "Improving sourcing from outside Europe" started in 2019 by MSF Japan and MSF Logistique, under the umbrella of the MSPP and MSF's Transformational Investments Capacity Committee. The objective of this project is to identify products of acceptable quality at a lower cost and expand the portfolio of suppliers to reduce the risk of shortages, creating a database of Asian manufacturers, especially looking at the rapidly developing markets such as South Korea, China, Malaysia and Thailand.[21] The project also aims to reduce lead times, by direct supply of the products purchased in Asia by regional hubs to the missions. Most Asian countries, except Japan, are non-Highly Regulated Countries, meaning that the MSF approval process for pharmaceutical and medical items follows the longest approval path and needs endorsement from the MSF International Office. Despite this, the Phase I of the project, completed in June 2021, has identified more than 1,000 manufacturers in the region (of which at least 44 have been already contacted) for some of the priority products. As estimated in the project document, from these preliminary results MSF may be able to save up to €250.000 per year from a single supplier and product[22].

However, it must be noted that diversifying sources should include regional and local sourcing close to where the operations happen, i.e., in Africa. Some voices claim for a transition 'from off-shoring to more on-shoring.' In this sense, an example of sourcing (even) "closer to home" is the validation of additional quality-assured sources in project countries by intersectional pharmacists. To increase the possibilities of doing local purchase of medicines and medical products in the mission countries, the MSF Pharmaceutical Quality Assurance coordination has coordinated more than 1,000 audits to assess potential suppliers in mission countries. This is a successful example of intersectional collaboration (see next point) and has helped missions with access to quality-assured medicines in case of emergency or import difficulties. In addition, further collaboration with partners organisations (i.e., QUAMED) involved in quality assurance, local market assessments and validation of local suppliers using internationally recognised standards may provide further opportunities to build on existing initiatives, avoid duplication of efforts, and further speed up validation and access to quality assured medicines and supplies.

Intersectional Collaboration

As also discussed under governance, collaboration, and communication between departments, between OCs and between ESCs is considered crucial: more efforts must be made to avoid silo approach in decision-making and development of policies, protocols, contradictory SOPs. There are a number of examples demonstrating effective intersectional collaboration related to supply chain. The first is the example of the MSPP, as mentioned earlier under 'design.' This programme aims to ensure efficient sourcing, pricing and availability of medicines and medical supplies for the missions. MSPP and its Global Procurement Policy (May 2021) work through collaboration between the different MSF OCs, streamlining the existing MSF Supply chain set up and trying to avoid duplication, waste, and operational complexity. The MSPP is developing the procurement function at movement level and one of their proposals is to transition procurement towards a category management model, where regional components could readily complement this approach.

[21] Improving sourcing from outside Europe, concept note – December 2018
[22] SEEAP Position Paper on Procurement and Supply– January 2021

Another example is the Supply Chain Community, a representation of people working for the five MSF OCs. This Community recently wrote an open letter to the MSF movement asking to redesign the Supply Chain Global Network, with very specific decentralisation and integration demands: 1) downsizing the investment, size, and number of supply centres in Europe and the "Global North" while moving them closer to the patients, following a decentralisation model per continent/region. 2) tailoring the supply efforts to the variability and specific needs of the mission countries to face increasing import difficulties 3) constituting an intersectional Supply Task Force 4) optimising the global supply chain footprint by sharing ESC per destination country instead of per OC 5) creating Country Intersectional Supply Chain offices. According to this letter, this transition is explained by the fact that 55% of value, 60% of country order lines and 61% of tons are sent to countries where more than 4 OCs are.

Other intersectional collaborations related to supply include the East Africa supply network, comprising the KSU and two sections in Uganda (OCB and OC Geneva (OCG)); there are plans that from 2022 onwards the KSU will serve as a regional supply centre for East Africa.

> "Having this intersectional collaboration is good from rationalisation, mutualisation and strategic collaboration point of view, but from a governance point of view, it's more complicated because I think these new entities that have intersectional dimension will be functioning through law and sort of task forces or committees with multiple representations from the different OCs."
>
> – Key Informant

Investing in Human Resources

The HR set-up for supply is seen as positive by the majority of the respondents: nowadays, dedicated and professionalised supply staff are available and trained and have clear career paths available within the organisation. The supply staff pool is strong and ready to be deployed. Furthermore, investment in supply staff development is perceived to be very effective, especially the "detachments", a mechanism that allows national staff to temporarily work on another mission country to learn about other ways of working. It is also appreciated the existence of an HR development strategy that allows temporary short-term positions to visit the mission with the aim to coach and mentor the national staff or an internationally recruited staff that doesn't have enough experience. Another measure that was mentioned as positive is the nationalisation of some positions - where a coordination position is filled by a locally recruited staff; this helps to ensure continuity of the activities and has a positive impact on the performance of the teams.

However, more needs to happen for the supply chain to adequately respond to the internal and external operational environment. The following opportunities were identified:

- Insufficient collaboration between OCs, especially at mission country level Examples cited include different OCs jointly approaching the NRAs, Ministries or other governmental bodies to agree on and streamline processes for import; and OCs combining forces negotiating contracts with local suppliers, to ensure minimum quantities for procurement can be reached, better prices obtained, and speaking with 'one MSF voice' in the mission country.

- More sea and road, less air. Adopting new strategies tackling the impact of supply activities in the global carbon footprint is one of OCB strategic priorities: "*the carbon footprint incurred when running a supply chain cannot be ignored. With the inclusion of climate change as an integral pillar of MSF global strategy and medical-operational policies, it goes without saying that the OCB Supply Chain will try to contribute as much as possible to the general effort*". The regionalisation of supply units (i.e., KSU) is a necessary step towards this objective, although it is perceived as insufficient. Transport of orders via air freight has a high impact on OCBs carbon footprint.

> "Over the past 3 years, due to lack of planning, the percentage of items distributed through air freight has increased. This is bad considering the cost perspective, footprint perspective. It's increasing every year, due to lack of roles and responsibilities, lack of vision, lack of planning."
>
> – Key Informant

- HR needs more attention. Respondents from mission countries highlighted the need for more capacity building of supply staff on supply chain systems (i.e., Unifield), procedures and guidelines, while interviews at HQ emphasised the need for more training and knowledge exchange between supply and medical/pharma staff. Other HR issues mentioned included the lack of a Pharmacy Coordination – a position that exists within other OCs and is only established in the OCB mission in DRC – and the need for follow-up on poor staff performance.
- Recentralisation, to some extent. The recentralisation roadmap (2018) only makes a very brief mention of supply: "What we want to achieve: Supply also does not seem to be a problem in terms of decision making. Several layers do exist but are considered useful in terms of mirroring and necessary checks and balance. In general, the last word is given to the project though constructive questions. There seems to be room for improvement with regards planning process details (i. e. supply docs deadlines not in coherence with ARO deadlines). There is also room to improve the capacity of the persons in charge of making medical orders." Most of interviewees said that, because of the nature of the supply chain, some components are better centralised. According to the study carried out by KYU on the MSF Supply footprint in 2017, "a fully decentralised model is not realistic, neither at regional level nor at country level. A central model is still needed to facilitate international supplies, quality compliance and emergency response. Regional platforms, in addition to central level, needs to be considered."

Overall, respondents said there is insufficient critical analysis of anticipated challenges which would allow a proactive response to the rapidly changing reality MSF – and the world at large – is operating in. In order to be able to rapidly and flexibly adapt to change, the supply chain and its wider context should be constantly analysed to understand where they might need to make changes or take action to mitigate against future disruptions. Here, scenario planning can be applied, whereby different variables are identified and 'forks in the road' are monitored to adapt course when and where needed. The Covid-19 pandemic has presented a unique case to see how the MSF supply chain responds to major disruptions and has also further emphasised the importance of investing in supply chain resilience to build stronger long-term operations.

> "Supply is strategic and will become even more so. We would like to have the supply chain clearly contextualised, with capacity to foresee and adapt to external events. For instance, we have a boat on its way to Mozambique already 6-7 months, and we now hear that we have a problem of containers; I'm afraid nobody will really explain us what the problem is, and nobody has anticipated this."
>
> – Key Informant

Initiatives mentioned above demonstrate that OCB is making valuable efforts to adapt to the internal and external environment. Internally, recentralization project and regionalization attempts are good examples of this. However, more investments in HR, such as training and capacity building, would be needed for a better adaption.

When it comes to the external environment, intersectional supply initiatives are good examples of adaptation, especially at mission country level. Still, more needs to happen for the supply chain in order to be able to respond in a more proactive way to the rapidly changing world. At the same time, the continuous challenge that the supply chain faces when adapting its activities to 30 completely different contexts and to external events beyond its control – such as climate change or a pandemic – is an accomplishment that should be acknowledged.

OCB OPERATIONAL AMBITIONS

IS THE SUPPLY CHAIN ALIGNED TO OCB OPERATIONAL AMBITIONS? (Q11)

In responding to this evaluation question, we reviewed the OCB Operational Prospects 2020-2023, as well as the OCB Strategic Orientation 2020-2023.

A summary of the Operational Prospects is included in Table 2 below. As shown, OCB expects to see increasing trends in epidemics, conflict and violence, sexual & reproductive health (SRH) and child health, a move towards integration of vertical programmes and responding to challenges with antimicrobial resistance, whilst at the same time moving away from longer-term vertical programmes (i.e., AIDS, cancer, and non-communicable diseases).

The identified trends and operational prospects will have an impact on the supply chain. For instance, emergency supply for the E-pool will play an increasingly important role, and availability of quality data to inform forecasts, reporting and monitoring will be more challenging in shorter-term projects or in projects with more specialised needs (i.e., due to antimicrobial resistance or drug-resistant tuberculosis).

For the OCB Strategic Orientations 2020-2023, the list of activities on how to implement these are also included in Table 2. A number of these can be more or less directly linked to the OCB supply chain.

'Putting field projects at the centre' and 'building regional operational hubs' are issues discussed under 'internal operational context, and supply chain initiatives are underway that focus on sourcing outside of Europe and establishing regional supply chain hubs.

There might be opportunity for further collaboration between departments through the focus on capacity building of staff, which is an objective of both the supply chain strategy as well as operations/medical departments through the MSF Academy for Healthcare. Training and learning & development of healthcare staff on supply chain-related issues (i.e., order planning) could be considered as a topic at the Academy. Similarly for training of supply chain staff on healthcare-related issues (i.e., quality assurance) in the projects or as part of preparation for a mission. These initiatives may increase understanding of each other's areas of expertise, and improve collaboration at all levels.

The orientation focusing on solid and forward-looking support systems with respect to supply specifically highlights enhancing risk, performance, and stock management to allow informed decision-making, and enlarging procurement coverage in all areas. In addition, the community of practice developed by the logistics community (Sherlog) is highlighted as best practice and to be extended to other departments. All activities highlighted here require Ops, Med, Log and Supply (as well as ICT and Finance) to not work in silo but as multi-disciplinary teams with a clear joint vision as set out by the leadership. As laid out in previous sections, the supply chain in its current set-up is only partially aligned to this operational ambition and needs specific attention in the areas of performance and stock management, and collaboration with other departments, in order to meet this orientation.

Another activity focuses on upholding accountability and efficiency in operations. Increasing accountability in the supply chain requires end-to-end performance monitoring of goods provided to the projects, which is done for the international part of the supply chain, whilst initiatives to monitor country-level supply chains are underway, for instance through the DART initiative. Increasing efficiency of operations with respect to the supply chain will require improvements in the planning process, which in turn will for instance allow more shipments to be done via sea instead of air. This also directly responds to the focus area of climate change and reducing MSF's carbon footprint.

Lastly, the orientation of 'think as a movement, act as an OC' with respect to the supply chain is underway through initiatives like the MSPP and the supply chain hub in Lebanon. However, as further described in Section 3.2 and 3.4, there is room for more collaboration especially between OCs at country level, for instance by streamlining processes between OCs related to importation and custom clearance, or jointly negotiating contracts with suppliers for local procurement of goods.

All in all, the OCB supply chain already lists a number of key priority areas in its Supply Chain Strategy 2020-2023, including further liaison with the E-Pool, and improvement of data quality. These two areas will need special attention in order to enable the supply chain to adequately respond to trends as identified in the Operational Prospects.

In addition, a number of initiatives are underway which directly respond to the MSF's operational ambitions as outlined in the Strategic Orientations 2020-2023, and these can be further expanded upon as outlined above.

Lastly, collaboration between the different departments is needed to ensure existing plans and initiatives are implemented, as well as vision and leadership from operations and management to clearly express what they expect from the different departments.

Table 2. MSF OCB Operational Prospects and Strategic Directions 2020-2023

TOPIC	TRENDS	STRATEGIC DIRECTIONS
Epidemics	↗	Reactive & innovative; VHF, regular & re-emerging outbreaks
Conflict & violence	↗	Direct & indirect victims; urban & forgotten conflicts; post-violence care
Trauma	↗	Timely; CoC; multi-disciplinary; +/- burns
SRH & Women's Health	↗	Scale up SAC & TOP; Family planning; comprehensive SGBV; STI; Cervical Cancer
SRH	↗	BEMONC & CEMONC
Child health	↗	CHP; Missed opportunities; NCD; IPD; eCARE, Adolescents
HIV low prevalence/coverage	↗	Vertical / Integrated; conflict; advocacy
Tuberculosis	↗	Opt out for TB; DRTB: vulnerable population, Integration, Impact transmission
Continuum of Care (CoC)	↗	PHC including community; quality, up & down referrals to /from hospitals
Clinical Care	↗	Multidisciplinary; patient-centred; quality; MSF Academy; eCARE-POCUS
Antibiotic Resistance	↗	Prioritise basic package; selected sites with full package
NCD (integrated)	↗	IPD, HIV& TB, paediatrics, migrants, insulin advocacy
Environmental health	↗	Adapting to new challenges; innovative catalytic projects; OCB's footprint
VOT	•	Migration & detention but also integrated in other projects
Migration	•	Vertical and integrated; vulnerable groups
Detention	•	Linked to migration, TB
HIV high prevalence/coverage	↘	AIDS; MoC, neglected population; advocacy
Hepatitis	↘	1 vertical; integrate; HBV screening among PLHIV
NCD (vertical)	↘	Landing towards 1 vertical project; MoC; advocacy
Cancer treatment	↘	No involvement, except for cervical cancer, Burkitt Lymphoma and Kaposi Sarcoma

Legend: ↗: Active Investment; •: Maintain same level of investment; ↘: decreasing investment

Table 3. OCB Strategic Orientations 2020-2023: How we will do it.

OCB STRATEGIC ORIENTATIONS 2020-2023
Put field projects at the center
Build regional operational hubs that tap into medical expertise, respond to emergencies and support field teams
Be connected to social movements and to communities in which we work. We will engage with the communities, listen and incorporate them in our projects.
Make the global mobile and diverse workforce a reality, where people and organizational needs, values and culture, development and sense of belonging are the core focus.
Build a stronger cadre of healthcare staff through the MSF academy for healthcare
Ensure solid and forward-looking support systems that are responsive to operational needs with agile processes

Analyse and advocate against the structures of exclusion that hamper the most vulnerable from accessing healthcare
Innovate in our fundraising approaches and continue diversifying our fundraising markets
Uphold values of accountability/efficiency in our operations and strategic resource management
Respond to climate change challenges
Think as a movement and act as an OC
Continue to strengthen the associative nature of our organisation

CONCLUSIONS AND RECOMMENDATIONS

As per the terms of reference, this evaluation is intended to inform action from the CoDir of MSF OCB. The current evaluation provides a descriptive analysis of the OCB supply chain with respect to its design, governance, strategy, and the internal and external operational environment it operates in (WHAT?). In addition, the performance of the supply chain was assessed, as well as the effectiveness and relevance of the governance and strategy, and the extent to which the supply chain is adapted to the internal and external context, and OCB's operational ambitions (SO WHAT?). Based on these findings, recommendations are made in the next section that can be used by the CoDir to inform future strategic decisions and choices (*NOW WHAT?*).

The descriptive analysis of the different components – design, governance, strategy, and operational environments is provided in the relevant sections of the report, under EQ 1,2, 3, 7 and 8.

The performance of the supply chain (EQ4) can be described in several different manners. First of all, by reviewing if the supply chain reaches performance targets set in a quantitative manner. And secondly, by summarising all that is working well, and all that can be improved, in the OCB supply chain. The latter also incorporates findings on the effectiveness of the governance (EQ5) and relevance of the strategy (EQ6), and the extent to which the supply chain is adapted to the internal and external context (EQ 9, 10), and OCB's operational ambitions (EQ 11).

PERFORMANCE OF THE OCB SUPPLY CHAIN – TARGETS

There is no comprehensive framework that monitors the performance of the OCB supply chain in an end-to-end manner. The international part of the supply chain is monitored through the MSF Dashboard and the Supply Chain Executive BI platform used by all OCs and other ESCs, that collect and analyse a wide set of supply chain indicators. The reliability of data that form the basis for these have been questioned. Taking this into consideration, one indicator that has a clear target is "ready-to-ship" of orders by MSF Supply to the projects, which should be 'on time' in at least 80% of the orders. In 2020 and 2021, this target has been achieved, with 86% and 84% of all orders shipped on time, respectively. Another indicator is lead time performance, which was achieved on 35% of all orders in 2021; assuming the target here is 100%, this has clearly not been achieved. However, OCB reportedly still performs better on lead time than other Ocs.

At country level, the one indicator that has a target is the stock discrepancy between physical stock count and stock reported in the system – this should be less than 5%, as measured through DART, using the system Unifield as means of verification which represents the stock situation at warehouse (not end-user) level, and data may not be very reliable. Stock discrepancies were found to be significantly higher than the set target (17% of line items and 38% in absolute value) and have not improved over the past years. This performance target has therefore not been achieved.

Overall, there are too few indicators with targets set in order to conclusively comment on the performance of the supply chain.

WHAT WORKS?

The supply chain works for MSF patients! The OCB supply chain bringing medical and logistics items to patients and projects around the world works, despite the often very challenging contexts that MSF operates in. Patients receive treatment and care, and projects and MSF staff receive supplies they need to provide medical assistance to people affected by conflict, epidemics, disasters, or exclusion from healthcare. Overall, country level staff perceive the supply chain as working well, as highlighted by the survey and SNA responses.

A pool of supply chain professionals is in place at all levels of the organisation, providing technical solutions and managing the supply chain. Initiatives like detachments and national staff starting to fill coordination-level positions are contributing to increased knowledge transfer and continuity of activities.

The supply chain of logistics items was positively perceived, in terms of its design, governance, functioning, and place within operations, with few recommendations for improvement.

Procurement, and in particular the MSPP, was highlighted as an example of best practice in terms of increasing efficiency and intersectional collaboration. Other examples of good intersectional collaboration include the Supply Chain Community and the East Africa supply chain network.

Expanding the number of sources validated for local procurement of quality-assured medicines and supplies was said to be a crucial initiative to address issues around importation and long lead times.

The practice of establishing longer-term contracts with local suppliers for procurement of logistics supplies in country helps to ensure contact availability of (quality) goods, stable and negotiated prices and facilitates payment.

The supply chain is guided by rigorous quality standards, standard operating procedures and guidelines that are implemented at all levels and help to assure quality, and outline processes and best practice throughout the supply chain.

Monitoring supply chain indicators and performance at international level is done through two different platforms used by all Ocs and ESCs jointly, while the performance system at country level is in process of being further developed. Reliability of data that form the basis of these systems have been questioned.

Guidelines and policies are adapted to reflect the reality of missions and projects, and at country level collaboration often takes place in an effective and solutions-oriented way. Mission staff has a particularly central role in the OCB supply chain, along with MSF Supply.

Initiatives enabling sourcing closer to (project's) 'home' are highly topical and important to pursue in order to respond to external operational challenges and OCB's operational ambitions.

Staff capacity building initiatives, the creation of communities of practice, the focus on creating a forward-looking support system, and the intention to increase operations accountability and efficiency can enable the adaptation of the OCB supply chain to the organisation's operational ambitions.

WHAT MIGHT OR MIGHT NOT WORK?

Order validation is perceived by some as very effective while by others as comprising too many steps that can slow down process and increase lead times

Rational use of medicines and medical supplies is an important step of the supply chain and was raised several times as an area of concern. However, has been insufficiently assessed in order to say if it works or not (see also Recommendations).

Strategic vision and leadership were regarded as very much person-dependent, and thus in some cases might work but in others needs to be improved, based on the individual and personality.

WHAT CAN BE IMPROVED?

Product selection is complicated by an excessive number of items in the MSF catalogue, which have been increasing over time.

Poor forecasting of medical orders and planning of international orders according to the chronogram can result in stock-outs and expiry of goods, local purchase from non-quality assured sources, and increased inefficiency (i.e., shipments by air instead of by sea, purchase of more expensive goods). Forecasting is hampered by poor data quality (e.g., discrepancies) and poor communication across departments.

Medicines and supplies are not always procured locally from quality-assured sources, which may compromise quality care and treatment.

Long lead times for international orders were reported by the mission countries and confirmed by the figure that only 35% of OCB orders in 2021 were within specified lead time.

The high and rising percentage of shipments transported via air (vs. sea/road) is undermining efficiency and also adding to MSF's carbon footprint, being at odds with MSF inclusion of climate change as an integral pillar of its global strategy.

High stock discrepancies suggest poor inventory management practices, which are further compromised by conflicting guidance from different departments (supply vs. medical/pharma).

There are a number of different monitoring and reporting systems, which are often not linked to each other (e.g., Isystock and Unifield), and there are questions around quality of data.

Performance monitoring of the supply chain is not end-to-end, does not include the supply chain of E-pool, and there is no comprehensive visibility of performance at HQ level. Stock ruptures and relatively high levels of overstock and sleeping stock were documented in the monthly medical stock reports from case study countries.

The E-pool is working in parallel to the rest of the supply chain in order to remain agile and effective, even though it is central to OCB operations and will likely gain in importance in the years to come.

The role and mandate of the OCB Supply Chain Department is insufficiently clear, as is its interaction with other OCB Departments and MSF Supply. Stock management is a source of tension between the

Medical (pharma) and Supply Chain Department, playing out at all levels, and the Supply Chain Department is perceived as working in isolation.

Governance of the supply chain is not well documented, especially at HQ level. At country level, documents related to roles and responsibilities are not well known by all, and high staff turnover and gaps in filling international positions impact their implementation.

Collaboration, communication and teamwork between different individuals and different departments is lacking, thereby undermining the proper functioning of the supply chain at all levels. Insufficient collaboration between different Ocs at mission country level impedes MSF to speak with one voice towards authorities and with suppliers, with would facilitate supply chain operations.

Though a Supply Chain Department strategy exists, there is no comprehensive OCB end-to-end supply chain policy and strategy document in place that is developed, implemented, and monitored by all stakeholders involved in the end-to-end supply chain, in particular the Supply Chain, Medical and Logistics Departments.

Lack of contextual analysis with respect to the supply chain in the wider operational context – or the new reality – makes the supply chain currently reactive rather than proactively responding to and anticipating challenges and issues this new reality brings.

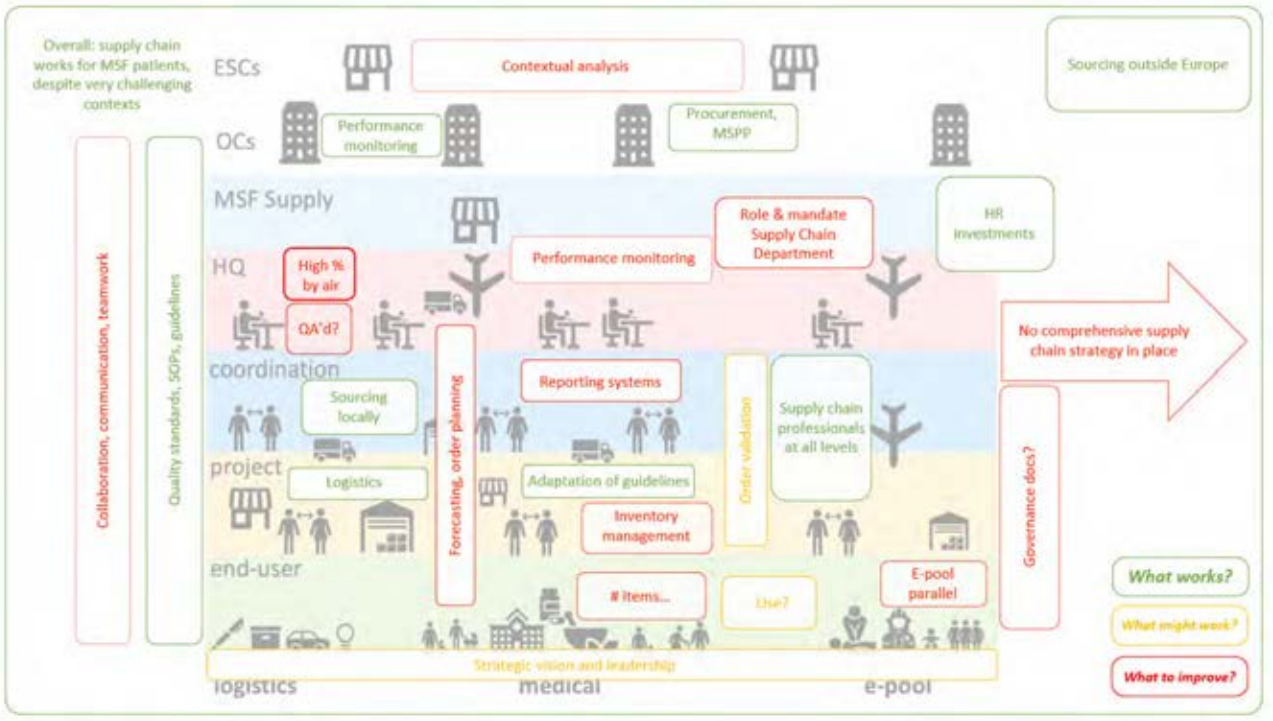


Figure 11. Summary of what works and can be improved in the OCB supply chain.

The evaluation of the OCB supply chain took a realist approach, aiming to answer the question of "*what works, for whom, in what respect, to what extent, in what contexts, and how?*."

Overall, this evaluation concludes that the OCB supply chain works for MSF's patients in terms of ensuring projects and staff receive the goods they need in order to provide medical assistance to those

in need, both in routine as well as in emergency contexts. Shortages and stock-outs do occur but are rare, and rigorous processes and strict quality assurance criteria are applied throughout the supply chain.

The way this is achieved may not always be the most effective or efficient: for instance, stock discrepancies illustrate issues with inventory management which can lead to stock-outs, expiry, or leakage, while costs may be unnecessarily high due to the rising reliance on air shipments.

The supply chain also does not work as well in all projects and is reportedly dependent on people and personalities. In addition, the lack of a comprehensive system monitoring the supply chain end-to-end makes it difficult to assess what works and what does not, and to respond effectively to issues arising.

At the same time, we conclude that the OCB supply chain works *despite* its poorly clarified and accepted governance structure, and lack of a comprehensive supply chain strategy.

On the one hand, the Supply Chain Department is identified by informants with the OCB supply chain itself, as a whole. Yet on the other hand, the Department is perceived as having a limited support function, and many fail to recognise the strategic relevance of supply chain activities for the whole of OCB's operations.

Upon its creation, the Supply Chain Department was caught in between being given responsibility for the OCB supply chain and its management, and the need to take on duties previously attributed to other departments, all of this taking place in a setting that revolved around a client/provider narrative, somehow limiting the Department's ability to shape its role. This situation, along with the unfolding of increasing tension around stock management, contributed to the creation of silos within OCB, with each stakeholder becoming increasingly protective of their domain of action. This is also reflected in the OCB supply chain strategy 2020-2023, which is in effect a supply chain department strategy, developed by the Department with limited consultation beyond.

A number of initiatives are being deployed within OCB as well as intersectionally that respond to a rapidly changing world in which the supply chain has to operate. The OCB supply chain is making strides to adapt but will require more proactive analysis and response in order to keep ahead of the game. This will also help the supply chain align further to OCB's operational ambitions.

It is important to appreciate the fact that the supply chain of goods entails all departments and actors needed to ensure that the right quality product, in the right quantities, and in the right condition is delivered to the right place, at the right time, for the right price, and to the right patient. This includes but is not limited to the Supply Chain, Medical and Logistics Department, as well as Operations, the E-pool, and others (i.e., Analysis). To make the OCB end-to-end supply chain work for everyone, communication, collaboration, and teamwork between individuals, between departments at all levels across the organisation is essential.

RECOMMENDATIONS

Recommendations are as follows:

 Immediate action

 Longer-term perspective

 High level recommendation /game changer

	ACTION	RESPONSIBLE	TIMING
1	Improve inventory management, reporting and E2E monitoring		
	Improve data quality at end-user level in order to reduce stock-outs, expiry and discrepancies, improve forecasts, accountability and evidence-based decision-making	Med/Pharma, Supply	
	Improve inventory management practices at end-user and warehouse level, and ensure consistent communication and guidance to MSF staff on best practices	Supply, Med/Pharma, Log	
	Conduct further analysis on the indicator 'sleeping stock' in order to distinguish between items that are stored for strategic purpose (i.e., spare parts) and items that are slow/non-moving	Supply	
	Building on DART, harmonize and link existing information system in order to comprehensive report and monitor the supply chain end-to-end	Supply, Med/Pharma, Log	
2	Source closer to home		
	Further strengthen capacity for local market assessment to validate quality sources for local procurement, thereby possibly liaising with other organisations	Med/Pharma, Supply	
	Continue and expand supply chain initiatives to reduce MSF's carbon footprint, through sourcing closer to (project's) home and critically analyse modes of transport	Supply, Ops,	
3	Develop a clear supply chain policy, strategy and structure for governance		
	Ensure governance processes are clarified and documented in a participatory way, in particular regarding stock management, starting with a definition of clear roles and ways of working of the different departments of OCB, from HQ to country level.	Supply, Ops, Med/Pharma, Log	

	In a consultative manner, develop a comprehensive OCB E2E supply chain policy and strategy that is jointly implemented and monitored by all stakeholders involved in the end-to-end supply chain	Supply, Med, Log, (E-pool, Ops)	
4	Stay ahead of the (supply chain) game		
	Proactively & critically analyse rapidly changing context and new challenges that could affect the supply chain, in order to go from being more reactive to more proactively anticipate supply chain issues, for instance through scenario planning, and in collaboration with other Ocs and ESCs	Ops, E-pool, Analysis, Supply, other Ocs, ESCs	
5	Communicate, collaborate and work together		
	Prioritize communication, collaboration & teamwork in order to foster a culture of safety & openness; to move from focusing on action to also give priority to the level of interaction of individuals and departments at all levels across the organisation.	Ops, all	
	Encourage the inclusion of key staff from all departments – including the E-pool – in regular review meetings on supply chain-related issues at country and HQ level, to discuss needs, data, strategy, and agree on next steps	Ops, Supply, E-pool, Med, Log, other	
	Consider training and L&D of medical, logistics and E-pool staff on supply chain-related issues, as well as supply chain staff on health-, log- and emergency-related issues to increase understanding of each other's areas of expertise, and improve collaboration at all levels	Supply, Med, Log, E-pool, Ops	

WAY FORWARD

As per the terms of reference, this evaluation is intended to inform action from the CoDir of MSF OCB. It is expected that the CoDir will review and discuss findings and take the proposed recommendations forward in line with action points as agreed in a consultative manner. While we have attributed proposed responsibilities for implementing the recommendations, ownership and buy-in of all OCB Departments will be necessary to ensure that the resulting change processes are carried out.

It is crucial that the results of this evaluation be shared with all the key informants that took part in this process and contributed their perspectives, making the evaluation possible. It is equally essential that feedback on this evaluation and on its results is provided by the CoDir to the supply chain community and to OCB at large.

ANNEXES

- Annex A. Document list included in desk review
- Annex B. Evaluation Matrix
- Annex C. Terms of Reference
- Annex D. Social Network Analysis

ANNEX A. DOCUMENT LIST INCLUDED IN DESK REVIEW

MSF OCB – general

- OPS (external) B&O: 2020 operational highlights and 2021 operational priorities
- OCB project list 2021 (Excel)
- MSF-OCB catalog UNICAT: https://unicat.msf.org/fr/cat?search
- MSF-Supply service catalog: https://msfsupply.atlassian.net/wiki/spaces/SC/overview?homepageId=1469972605
- Recentralization ROADMAP: Proposal (December 2018)

MSF OCB SUPPLY CHAIN SPECIFIC

General

- OCB Supply Chain Vision 2020-2023
- The Unifield Supply Chain briefkit Diagram (PPT)
- Bilan and objectives 2020-2021 (presentation 2020 OCB Supply Chain highlights and 2021 OCB Supply Chain priorities (April 2021) (update Year 2 MSF OCB strategic orientations 2020-2023)
- MSF Contact 147 – OCB Supply Chain (pp 85) (October 2019)
- MSF Supply strategy revision: survey/interview with stakeholders
- Supply chain performance management:
- KPIs from MSF Supply
- KPIs from MSF OCB through PowerBI

On E2E reform:

Before 2012:

- Supply chain Vision V3
- Proposition de developpement appro V2
- Meeting Notes Supply Workshop nr4 efficiency and effectiveness
- LOG.VERS UN NOUVEAU DEPARTEMENT LOGISTIQUE.OCB-JAN10
- 110301_Re_ Vers une nouvelle dynamique

Between 2012-2016 *(documents in below folders still to be reviewed and selected)*

- 1_VISION_STRATEGY
- 2_BILAN&OBJECTIFS
- 3_INDICATORS
- 4_PROJECTS
- 5_DOC

Less relevant

- The MSF Supply Strategy: What, Why, Who, How, When? (June 2013)
- Induction Supply Memo (Sept 2020)
- MSF Contact 137 – OCB Supply Chain; une brève histoire du End-to-End, vers une nouvelle mission (Nov 2016)
- OCB Supply Chain 2018-2020 strategic narrative
- SCOP Framework (Mission Supply Chain Mapping; ReadMe v1.0)
- MSL in Supply Chain (2019)
- Integration of Medical Stock Policy 2014

STAKEHOLDER MAPPING (ROLES, RESPONSIBILITIES)

- Governance RACI OCB Supply Chain (2017)
- Field RACI (responsible, accountable, consulted, informed)
- MSF OCB Who's Who 2020

PAST EVALUATIONS

MSF International

- Deloitte Supply Chain Mapping 2016 (all MSF), including summary, recommendations
- KYU MSF Supply Chain Network Design (July 2017)

MSF-OCB/OCA

- EVALUATION OF THE STOP STOCK OUTS PROJECT (SSP), SOUTH AFRICA-November 2016
- OCA CHAD UNALLOCATED STOCKS: EVALUATION OF A CENTRALISED "UNALLOCATED" INVENTORY MANAGEMENT EXPERIMENT- April 2018

MSF-OCB pharma initiatives

- ToR Pharma-Supply ways of working analysis (OCB, May 2021?)
- Distribution Pharmacies in OCB (OCB, November 2020)
- GSDP Guidelines OCB –draft (September 2021)
- OCB Good Pharmacy Practice (2017)

MSF Int'l initiatives

- Transformational Investment Capacity (TIC): improving sources from outside Europe
  - ⇒ Position Statement on Procurement and Supply from Southeast and East Asia Region (MSF Int'l, January 2021)
  - ⇒ Improving Sourcing from Outside Europe: project summary (June 2019), Core ExCom approval (May 2019)

    - ⇒ Efficiency in Support to Operations: TIC update, February 2021
- Supply Chain Community Letter (November 2020?): Redesign of the MSF Supply chain Global Network
- Towards a Networked OC (July 2020)

Standard Operating Procedures (SOP)

- Policy defining required transportation conditions of medical products for MSF (2012)
- MSF transportation of medical products (May 2012)
- MSF Policy for the Procurement of Medical Products; MSF International (2019)
- In-country transport policy for medical products (MSF OCB, April 2018)
- Supply of drugs and medical supplies and management of pharmacies, second edition (2008)
- MSF Global Procurement Policy 2021
    - Global Procurement Policy, PowerPoint (March 2021)
- MSF guidance for mixed supply of medical products (2015)
- Deconditioning of drugs in MSF OCB Projects (October 2019)
- Local purchase of medical products Iraq –draft- (April 2020)

OTHER

- OCB Logs in operations; 2020-2023 orientations
- MSF SEU 6-step process
- MSF 125 MSF Kenema Hospital Logframe
- Biomed Division of Responsibilities (2018)

ANNEX B. EVALUATION MATRIX

Issue	Topic	Evaluation question	Indicators	Data sources
OCB supply chain specific				
WHAT?	**Design**	EQ 1: What is the set-up/design of the end-to-end supply chain for goods in MSF-OCB?	• Evidence describing the different steps (selection & quantification, procurement, storage/distribution & inventory management, rational use, ordering & reporting) of the OCB supply chain, from projects to HQ to projects • Evidence demonstrating the extent to which the supply chain is implemented as designed • Stakeholders' perception of the design of the MSF-OCB supply chain	**Document review** for description of the OCB supply chain design **Key informant interviews** for further description and explanation on the set-up and design **Country case studies** providing a deep dive on set-up of supply chain in three of the OCB mission countries
	Governance	EQ2: What is the governance of the supply chain of goods in OCB?	• Evidence describing the governance of the OCB supply chain, at different stages (project, coordination, OCB HQ, MSF Supply, KSU) • Evidence demonstrating the extent to which the supply chain is governed as per established governance arrangements • Stakeholders' perception of the governance of the MSF-OCB supply chain	**Document review** for description of the OCB supply chain governance **Key informant interviews** for further description and explanation on the supply chain governance **Country case studies** providing a deep dive on governance of supply chain in three of the OCB mission countries
	Strategy	EQ3: What is the strategy guiding the supply chain?	• Evidence describing the current strategy guiding the OCB supply chain (including a review of the OCB reform 2012-2017) and OCB's operational ambitions	**Document review** for description of the OCB supply chain strategy and OCB's operational ambitions **Key informant interviews** for further description and explanation on the strategy and its implementation, including Reform

Issue	Topic	Evaluation question	Indicators	Data sources
			• Evidence demonstrating the extent to which the strategy is guiding the implementation of the supply chain • Stakeholders' perception of the strategy of the MSF-OCB supply chain, and its implementation	**Country case studies** providing a deep dive on implementation of the strategy in three of the OCB mission countries
SO WHAT?	**Design**	EQ4: What is the performance of the supply chain of goods?	**APPENDIX A.** Evidence demonstrating adequate (*to be defined, threshold set in performance framework?*) performance of the supply chain over time according to selected KPIs • Stakeholders' perception of the performance of the different steps in the MSF-OCB supply chain	**Document/Dashboard review** for description of performance indicators of the OCB supply chain (PowerBI, others?) **Online survey** to capture perceptions of the performance of the supply chain according to its strategic objectives **Key informant interviews** to capture perceptions of the performance of the different steps of the supply chain, including reasons for challenges and achievements **Country case studies** providing a deep dive on set-up of the performance of the supply chain in three of the OCB mission countries
	Governance	EQ5: How effective is the governance of the supply chain of goods?	**APPENDIX B.** Evidence demonstrating effective governance of the supply chain • Stakeholders' perception of the effective governance of the MSF-OCB supply chain	**Document review** for implementation on governance policies and strategies **Online survey** to capture perceptions on effective governance (esp. roles & responsibilities) of the supply chain **Key informant interviews** to capture perceptions of the governance (roles, responsibilities, guiding documents) of the supply chain **Social network analysis** to explore interactions and relationships among selected stakeholders within the supply chain **Country case studies** providing a deep dive on set-up of the governance of the supply chain in three of the OCB mission countries

Issue	Topic	Evaluation question	Indicators	Data sources
	Strategy	EQ6: To what extent is the strategy relevant to OCB's supply chain?	**APPENDIX C.** Evidence linking key objectives of the strategy to the key objectives of the OCB supply chain in different operational contexts • Stakeholders' perception of the relevance of the latest supply chain strategy to the MSF-OCB supply chain (reference to the Supply Chain Reform)	**Key informant interviews** to capture perceptions of the relevance of the supply chain strategy in different operational contexts **Country case studies** providing a deep dive on relevance of the nine strategic objectives of the supply chain strategy in three of the OCB mission countries
OCB supply chain within the wider context				
WHAT?	**Internal context**	EQ7: Which are key elements of the internal operational environment in which OCB operates?	**APPENDIX D.** Evidence describing the key elements of the internal operational environment of OCB that directly or indirectly influence the supply chain **APPENDIX E.** Stakeholders' perception of the main factors in OCB internal operational environment that directly or indirectly influence the supply chain	**Document review** providing a description of the OCB internal operational environment **Online survey** to capture perceptions on the OCB internal operational environment that may influence the supply chain **Key informant interviews** to further identify factors in the OCB internal operational environment that may influence the supply chain **Country case studies** providing further evidence of these elements in the internal OCB environment
	External context	EQ8: Which are key elements of the external operational environment in which OCB operates?	**APPENDIX F.** Evidence describing the key elements of the external operational environment of OCB that directly or indirectly influence the supply chain **APPENDIX G.** Stakeholders' perception of the main factors in OCB external operational environment that directly or indirectly influence the supply chain	**Document review** providing a description of the OCB external operational environment **Online survey** to capture perceptions on the OCB external operational environment that may influence the supply chain **Key informant interviews** to further identify factors in the OCB external operational environment that may influence the supply chain **Country case studies** providing further evidence of these elements in the external OCB environment
SO WHAT?	**Internal context**	EQ9: To what extent is the OCB supply	**APPENDIX H.** Evidence demonstrating that the OCB supply chain has taken note of and	**Document review** providing of implementation of changes in design, strategy, or governance if/when needed.

Issue	Topic	Evaluation question	Indicators	Data sources
		chain adapted to the internal operational environment?	adequately responded to the internal operational environment, in terms of adapting its design, strategy and/or governance. **APPENDIX I.** Stakeholders' perception on the extent to which the OCB supply chain has taken note of and adequately responded to the internal operational environment, in terms of adapting its design, strategy and/or governance.	**Online survey** to capture perceptions on level of adaption of the OCB supply chain to identified factors in the internal operational environment. **Key informant interviews** to further explore adaptability of the supply chain to internal operational environment **Country case studies** providing further evidence of the adaptation of the supply chain to the internal OCB environment
	External context	EQ10: To what extent is the OCB supply chain adapted to the external operational environment?	**APPENDIX J.** Evidence demonstrating that the OCB supply chain has taken note of and adequately responded to the external operational environment, in terms of adapting its design, strategy and/or governance. **APPENDIX K.** Stakeholders' perception on the extent to which the OCB supply chain has taken note of and adequately responded to the external operational environment, in terms of adapting its design, strategy and/or governance.	**Document review** providing of implementation of changes in design, strategy, or governance if/when needed. **Online survey** to capture perceptions on level of adaption of the OCB supply chain to identified factors in the external operational environment. **Key informant interviews** to further explore adaptability of the supply chain to external operational environment **Country case studies** providing further evidence of the adaptation of the supply chain to the external OCB environment
	OCB's operational ambitions	EQ11: How well aligned is the current supply chain to OCB's operational ambitions?	• Evidence clearly outlining the OCB operational ambitions • Evidence demonstrating the extent to which the supply chain is aligned to these ambitions. • Stakeholders' perception on the extent to which the supply chain is aligned with the OCB ambitions.	**Document review** providing a clear description of the OCB operational ambitions **Key informant interviews** to further explore the extent to which the supply chain is aligned with the OCB ambitions
Conclusions and recommendations				

Issue	Topic	Evaluation question	Indicators	Data sources
NOW WHAT?	This evaluation area will be addressed at a later stage of the evaluation process, and no specific evaluation questions are attached to it. Conclusions and recommendations necessary to address the “now what?” will be drafted by the evaluation team after data collection and analysis have been completed. Proposed recommendations will be discussed and validated in a working session with the Evaluation Group, as presented in the evaluation workplan. At present, we do not foresee the development of scenarios as part of the “now what?.”			Triangulation of data sources (document review, online survey, key informant interviews, social network analysis, country case studies) Facilitation of discussion on findings with Consultation Group in Working Session

ANNEX C. TERMS OF REFERENCE

***Doctors without Borders/Médecins Sans Frontières** (**MSF**) is an international medical humanitarian organization determined to bring quality medical care to people in crises around the world, when and where they need regardless of religion, ethnical background, or political view. Our fundamental principles are neutrality, impartiality, independence, medical ethics, bearing witness and accountability.*

The Stockholm Evaluation Unit (SEU), based in Sweden, is one of three MSF units tasked to manage and guide evaluations of MSF's operational projects. For more information see evaluation.msf.org.

SUBJECT/MISSION:	END-TO-END SUPPLY CHAIN
Starting date:	End-May 2021
Duration:	Final report to be submitted by August 2021
Requirements:	Interested applicants should submit: 1. A proposal describing how to carry out this evaluation (including budget in a separate file), 2. a CV, and 3. a written sample from previous work
Deadline to apply:	2359hrs CEST on May 24, 2021
Send application to:	evaluations.sweden@stockholm.msf.org
Special considerations:	It is anticipated that the evaluation team will need to visit a range of projects.

BACKGROUND

As a medical humanitarian organization, ensuring the timely and cost-effective provision of quality goods and services to the projects is a fundamental prerequisite for MSF Operational Centre Brussels (OCB) to achieve its medical operational ambitions, both in responding to sudden onset emergencies and in the routine programming.

Making this happen, is the OCB Supply Chain, comprised of a Supply Chain Department, Supply Centres in Belgium, and Nairobi (MSF Supply and Kenya Supply Unit) and numerous project and mission level supply teams in the field. At any given moment, the Supply Chain engages approximately 600 personnel, oversees, and manages approximately 240 warehouses and storage locations. The direct spending in the supply chain (goods) represents €62 million, the indirect spending (services) €68 million, totalling approximately €130 million annually.

The OCB Supply Chain is an End-to-End and demand driven supply chain, meaning that for every item supplied there is a clearly identifiable authority who has requested the item and who will in turn receive the item at the point of use. Requests can be made, either through the project planning such as at the start of a project, through periodic ordering, such as to replenish stock or ad-hoc if a new item is needed. From the point of request, responsibility is shifted to the OCB Supply Chain which is responsible for a series of activities including the purchase of goods and services, transport to final

location, warehousing, customs clearance, and physical stock management. The OCB Supply Chain responsibility ends when the item is received and both the item, and responsibility, is transferred back to the requesting authority in the different departments (e.g., Logistics, Medical) and goes into, for example, the end user units, like pharmacies, houses, or logistics workshops.

In addition to the sheer size, the supply chain must deal with numerous complexities inherent in the operational environment. Medical items and drugs can have short and variable shelf-life and frequently require cold-chain storage or maximum storage temperatures over prolonged periods. Strict quality assurances need to be in place for drug procurement and as the organization pushes the envelope on its medical ambitions, the range of drugs and medical supplies required keeps on growing – and the complexity to manage them as well.

On top of the medical complexities and challenges traditional to a supply chain, the operational environments MSF works in have their own challenges and are arguably becoming more diverse. Extreme weather patterns (heat, flooding) are becoming more normal and the remote, often conflict-ravaged, places MSF works provide challenges for the transportation and storage of items. As there are increases in the state legislation and control, new obstacles in the procurement and importation regulations emerge.

The apparent linear simplicity of the supply 'chain', a series of interconnected links, perhaps masks some of the interdependencies of what might better be described as a supply system. Along the supply chain there are numerous touchpoints where technical input is required from technical referents and departments. For example, the Supply Chain needs to work closely with medical and logistical personnel at both the point of request, to ensure accurate data is available to guarantee appropriate identification of needs (forecasting), at the point of procurement (ordering), and to ensure quality control. Forecasting and ordering remains under the accountability of medical and logistical teams. The specifics related to the handling and handover of items from the warehouse to different end points can vary according to different projects and subsequently transit times can vary. With long transit times, medical input can be needed to monitor stock levels and expiry dates etc. Good supply monitoring, which is the backbone of a supply chain, needs to happen across multiple storage points and requires a collaborative approach at project level to avoid shortages and ruptures which can in turn impact on program effectiveness.

While the OCB Supply Chain has been developed to meet the needs of OCB medical humanitarian ambitions it also has to operate with some prescriptive elements and initiatives from MSF International and incorporate those into its design. OCB Supply Chain strives to operate in line with industry standards, and it is very important that the supply chain is optimized around the unique and specific requirements of MSF's operations. This is referred to in its mission statement and strategic ambitions, where it aims "to provide flexible solutions fitting the needs of Operations" (*OCB Supply Chain Strategy Document 2020-2023*). The OCB Supply Chain has a Framework for Action, operationalizing the strategic document, based on four points: reliability, proactivity, rapidity, and reactivity (in order of importance).

ORGANIZATIONAL CHANGES

Starting in 2012, OCB initiated the End-to-End Reform amounting to a series of significant investments to optimize and improve the supply chain's capabilities in terms of service level, cost and quality of products and services. Investments were made specifically to the organizational set-up (including human resources and governance), and to develop and implement a series of tools that would help

optimize at the process level, requiring particularly significant investment into elements including hardware, software, and human resources. It also aimed to achieve a better oversight of the Supply Chain by bringing together different supply entities and incorporating both the international supply and local supply under the same system.

A number of changes were made to the resourcing and governance of OCB Supply Chain, including increasing capacity and expertise with dedicated supply positions in the missions (2012), dedicated supply people in the operational cells (2014), and creation of the Supply Chain Department, integrated into the *Comité des Directeurs* (CoDir, ENG. Committee of OCB Directors of departments) (2016) and finally, with the handover of all supply related activities from logistics to the new Supply Chain department.

PURPOSE AND INTENDED USE

This evaluation comes at the request of the office of OCB's General Director to inform discussions to be held by the CoDir. The evaluation should inform these discussions by assessing the extent to which the objectives of the supply chain are being met and identify areas working well and the critical issues that still need to be addressed.

To achieve this, the evaluation needs to provide a descriptive analysis ("What?") of the supply chain, its strategy and design as well as its implementation and results. The evaluation also needs to assess ("So what?") the overall performance of the supply chain with respect to delivering on the medical humanitarian ambitions of the organization and considering the different contexts of operation and with the intention of identifying what works, when, for who and under what circumstances. The evaluation should conclude ("Now what?") with recommendations or scenarios that can be used by the CoDir to inform future strategic decisions and choices. The formulation of recommendations or scenarios should be done as part of a consultative process.

It should be noted that, although significant investments have been made during the End-to-End Reform, it is not the intention to compare the now against the 'before' but rather to compare against today's available standards, guidelines, and ideal types.

The evaluation should only consider the supply chain's efforts vis-à-vis supplying goods (services are not to be included in the scope).

EVALUATION CRITERIA AND QUESTIONS

EQ1: What elements of the supply chain design (set-up), strategy and governance could beadapted to better optimize the capacity to deliver on the objectives?

- **APPENDIX A.** Describe the internal and external operational environment and how the supply chain design (set-up), strategy and governance is adapted to this?
- **APPENDIX B.** How well adapted is the supply chain, its design (set-up), strategy and governance, to the operational ambitions of OCB and the internal and external operational environment?

EQ2: What are the main limitations and opportunities in the supply chain functioning and how do these relate to different operational contexts?

APPENDIX C. Describe the supply chain functioning with regards to the effective and efficient delivery of quality goods to the project locations?

APPENDIX D. How well is the supply chain functioning against the objective to provide timely and efficient supply of goods to project locations at the required quality?

EQ3: In what ways could the organization limit the negative consequences and build on the positive outcomes of the supply chain functioning?

APPENDIX E. What is the effect of the supply chain's functioning when considering the positive and negative, intentional, and unintentional, impact on the OCB operational ambitions bothglobally and at the local level?

APPENDIX F. How significant are these effects when considering the operational ambitions of the organization and the projects' objectives?

EXPECTED DELIVERABLES

- **Evaluability exercise**
  To ensure a common vision of the evaluand.
- **Inception Report**
  As per SEU standards, after conducting initial document review and preliminary interviews. It will include a detailed evaluation proposal, including methodology.

- **Draft Evaluation Report**
  As per SEU standards. It will answer to the evaluation questions and will include conclusions, lessons learned and recommendations.

- **Working Session**
  As part of the report writing process, a meeting with the commissioner, consultation group members and SEU evaluation manager. The evaluator will present the findings, collect attendances´ feedbacks and will facilitate discussion on lessons learned or recommendations.

- **Final Evaluation Report**
  After addressing feedback received during the working session and written inputs.

- **Presentation of the Final Evaluation Report**
  An online presentation of the final report for OCB and possible other stakeholders of interest.

TOOLS AND METHODOLOGY PROPOSED

In addition to the initial evaluation proposal submitted as a part of the application (see requirement chapter), a detailed evaluation protocol should be prepared by the evaluators during the inception phase. It will include a detailed explanation of proposed methods and its justification based on

validated theories. It will be reviewed and validated as a part of the inception phase in coordination with the SEU.

It is anticipated that the evaluation team will need to visit a range of projects and the methodology will need to include appropriate sampling strategies to identify the number and location of the projects to be visited.

RECOMMENDED DOCUMENTATION

- Plans, monitoring data and reporting, from both the OCB Supply Chain and projects
- Previous assessments and audits conducted
- Strategic documents and plans
- Internal presentations
- Reporting
- Existing guidelines

PRACTICAL IMPLEMENTATION OF THE EVALUATION

Number of evaluator(s)	Flexible
Timing of the evaluation	June-October

PROFILE/REQUIREMENTS FOR EVALUATOR(S)

Requirements:

- Specific evaluation competencies related to evaluation of complex systems,
- Significant knowledge and understanding of supply chains systems in the medical and or humanitarian contexts,
- Excellent communication and diplomacy skills and ability to negotiate sensitive information with a range of stakeholders,
- Fluency in English, spoken and written, and
- Willingness and ability to travel to the selected field sites (TBD), alternatively identify partners to work with in those locations.

Assets:

- Experience with MSF either directly or through evaluations,
- Supply chain related expertise in areas of specific relevance to MSF operations, i.e., pharmaceutical goods, transport mechanics,
- Professional fluency in French language, spoken and written, and/or
- Good knowledge of organizational development and strategic planning.

APPLICATION PROCESS

The application should consist of a technical proposal, a budget proposal, CV, and a previous work sample. The proposal should include a reflection on how adherence to ethical standards for evaluations will be considered throughout the evaluation. In addition, the evaluator/s should consider and address the sensitivity of the topic at hand in the methodology as well as be reflected in the team set-up. Offers should include a separate quotation for the complete services, stated in Euros (EUR) or Swedish crowns (SEK). The budget should present consultancy fee according to the number of expected working days over the entire period, both in totality and as a daily fee. Travel costs, if any, do not need to be included as the SEU will arrange and cover these. Do note that MSF does not pay any per diem.

Applications will be evaluated based on whether the submitted proposal captures an understanding of the main deliverables as per this ToR, a methodology relevant to achieving the results foreseen, and the overall capacity of the evaluator(s) to carry out the work (i.e., inclusion of proposed evaluators' CVs, reference to previous work, certification et cetera).

Interested teams or individuals should apply to **evaluations.sweden@stockholm.msf.org** referencing **SUPCH** no later than by **May 24, 23:59 CEST.** We would appreciate the necessary documents being submitted as separate attachments (proposal, budget, CV, work sample and such). Please include your contact details in your CV.

ANNEX D. SOCIAL NETWORK ANALYSIS

As part of the MSF OCB supply chain evaluation, we analysed a subset of the OCB supply chain of goods, with specific focus on the HIV project located in the Democratic Republic of the Congo, applying a social network analysis methodology. Aim of this analysis was that of clarifying which are the key lines of interaction around supply-related issues within OCB, clarifying the involvement of each organisational level. We also intended to document the perceived quality, usefulness and timeliness of these exchanges, as well as their frequency and key issues they cover. This SNA is based on the results of an online survey.

METHODS

Social Network Analysis (SNA) is defined as a "distinctive set of methods used for mapping, measuring and analysing the social relationships between people, groups and organisations."[23] SNA helps characterise relationships between organisations – including collaborations, resource exchange, information exchange, or memberships in a partnership. The nodes in the network are the individuals, while the links show relationships or flows between them. SNA provides a visual and a mathematical analysis of these relationships. One of the core assumptions is that the patterns of these relationships have important effects on individual and organisational behaviour, constraining or enabling access to resources and exposure to information and behaviour.

[23] Karl Blanchet, Philip James, How to do (or not to do) … a social network analysis in health systems research, Health Policy and Planning, Volume 27, Issue 5, August 2012, Pages 438–446, https://doi.org/10.1093/heapol/czr055

In order to keep the SNA analysis feasible, it would not have been possible to involve and map the entirety of the OCB supply chain. It was therefore agreed to involve a sample of fifteen staff representing Supply, Logistics, Medical, Operations and Pharma from HQ to project level, as well as MSF Supply and the Kenya Supply Unit (KSU).

Selected participants were invited to complete an online survey hosted on the Alchemer[24] platform. The survey was launched on 29 October 2021, and remained online until 19 November 2021. The survey primary focus regarded the identification of interactions within the sampled network. Other topics covered were perceptions on the performance of the OCB supply chain in its entirety, perceptions on the quality, usefulness and timeliness of exchanges within the sampled network, as well as key topics of interaction among actors, frequency and means of communication used.

Quantitative network data collected through the survey was analysed using the NodeXL software[25], applying a Harel-Koren Fast Multiscale algorithm. Qualitative data were analysed using content analysis. Both are summarised in this annex.

LIMITATIONS

We had initially selected the Masisi project for inclusion in the sample, however after three reminders no responses were received. In consultation with the SEU and Cell 1, it was agreed to change the sampling and involve the HIV project, considering they would be more familiar with the evaluation process as being also included in the country case study for DRC. Overall, 9 of 15 identified respondents participated in the survey, for a response rate of 60%. As it can be observed in Table 1 below, the response sample was rather unbalanced, as the survey received only one response from both Project and OCB HQ level despite the multiple reminders. This unbalanced and relatively low response rate has likely led to a partial representation of the role of these actors in the network, as well as to a partial representation of perceptions on the stakeholders these actors interact with.

SOCIAL NETWORK ANALYSIS

SNA Concepts and Definitions

Table 1: Key SNA concepts and application in this analysis

TERM	MEANING	APPLICATION
Network	The relationship that exists between actors.	A simplified network for the OCB supply chain is analysed, involving OCB HQ, MSF Supply, KSU, Mission and Project staff
Nodes	The nodes or vertices in the network represent the individual actors.	The network includes 14 nodes (actors), 9 of which participated in the survey. One node is not represented in the network map as they were not listed as being part of the exchanges and did not complete the survey.

[24] https://www.alchemer.com/
[25] www.smrfoundation.org/nodexl/

TERM	MEANING	APPLICATION
Edge	The edge is the relationship between two nodes and drawn as a line. The edge can be directed representing the flow of the relationship by an arrow or undirected, disregarding any sense of direction between the nodes.	The edges in our graphs are directed as we asked participants to indicate with whom they collaborated within the network.
	Actor metrics	
In-degree centrality	The in-degree centrality of an actor is a count of the number of actors from whom it is on the receiving end. If an actor is on the receiving end of many relationships, they are said to be prominent, or to have high prestige. That is, many other actors seek to direct ties to them, and this may indicate their importance.	Project Supply has the highest value, as almost all respondents reported exchanging with Project Supply. This actor is followed very closely by Mission Log, Pharma, Supply, and MSF Supply. These actors are sought after by others.
Out-degree centrality	The out-degree centrality of an actor is a count of the number of actors it relates to. Actors who have unusually high out-degree centrality are actors who are able to exchange with many others or make many others aware of their views. Actors who display high out-degree centrality are often said to be influential actors.	OCB Supply Chain Department had the highest value, but this is not corroborated by in-degree centrality values. MSF Supply, Mission Supply and Mission Pharma also have a high out-degree centrality, with high reciprocation levels, testifying to their central role in the OCB supply chain.
Betweenness centrality	Betweenness centrality measures the extent to which a vertex lies on paths between other vertices. Vertices with high betweenness may have considerable influence within a network by virtue of their control over information passing between others.	Mission Pharma has by far the highest betweenness centrality, followed by MSF Supply and OCB Supply Chain Department. By connecting others in the network, these actors also can play a key role in channelling communication and information.
Eigenvector centrality	Eigenvector centrality is a measure of the influence of a node in a network. It assigns relative scores to all nodes in the network based on the concept that connections to high-scoring nodes contribute more to the score of the node in question	MSF Supply and the OCB Supply Chain Department had the highest value, followed by Mission Supply and Pharma, indicating they are very active within the supply chain network, also by

TERM	MEANING	APPLICATION
	than equal connections to low-scoring nodes.	virtue of being connected to more central actors.

Network Interactions

All members were requested to identify at what level they worked (OCB HQ, MSF Supply, KSU, Mission, Project) and for which department or organisation they worked (Departments: Logistics, Med/Medical, Med/Pharma, Operations, Supply; organisations: MSF Supply and KSU). They were subsequently asked to identify with which ones among the other 14 profiles sampled for the SNA they were in contact regarding supply chain matters. Nine actors responded, documenting 56 interactions within the network.

Figure 1 below represents the OCB Supply Chain network map resulting from analysis of responses received. The edges highlighted in blue represent the interactions that were reciprocated, that is to say exchanges that were mentioned and rated by both parties involved. These represent 43% of the total (24/56).

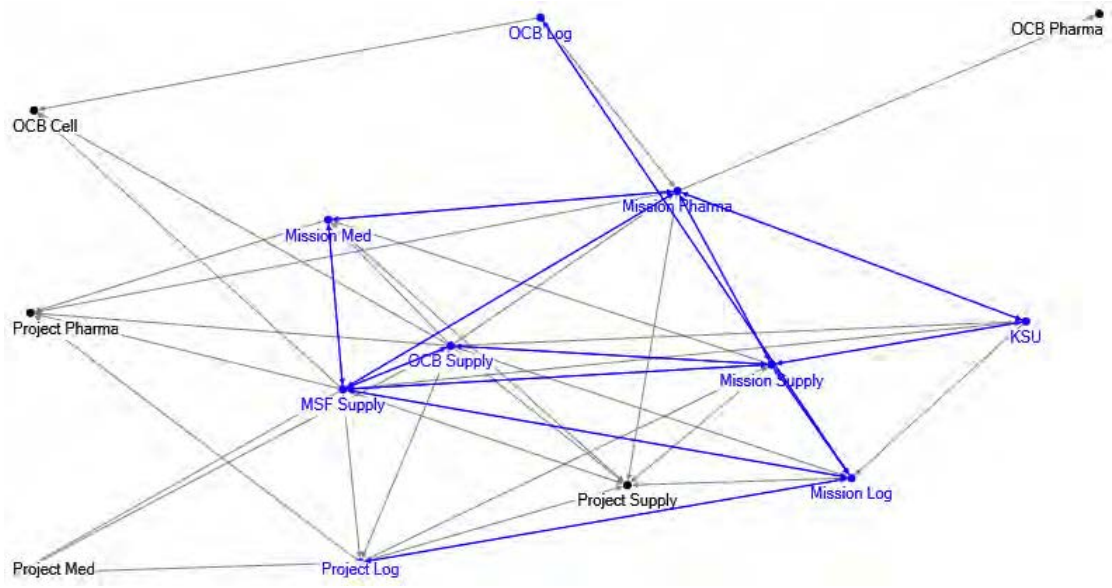


Figure 1: SNA map of the supply chain network

The network map shows strong interactions taking place at Mission level and with MSF Supply, with these actors creating a subset at the centre of the network, and bridging connections among others. This is confirmed by the higher in- and out-degree centrality values observed for MSF Supply, Mission Supply, and Mission Pharma, all with high reciprocation levels. Mission Pharma also has the highest betweenness centrality value of the entire network, confirming its role in serving as a connection between other stakeholders. The OCB Supply Chain Department is also positioned very centrally and has the highest Eigenvector centrality of the network along with MSF Supply, indicating that these two actors have established connections with the most relevant actors in the network. However, OCB Supply Chain out-degree centrality is very low and most of its connections are unreciprocated, indicating a possible limited involvement perceived by other stakeholders. Other Departments at OCB equally appear on the periphery of the network, and appear primarily connected to their respective

staff working at mission level. These exchanges are also mostly unreciprocated as OCB Log, Med and Operations (Cell) did not take part in the survey. The OCB Medical Department was not mentioned by any of the respondents, and therefore does not appear in the network map. Project staff also takes a more peripheral position in the network, and their interactions appear to take place primarily with their Mission-level correspondents. Also, in this case however exchanges are mostly unreciprocated due to low survey participation at project level. The Project Supply presents a very high level of in-degree centrality, as was reported as being at the receiving end of many interactions. Table 2 below presents an overview of all actor metrics.

Table 2. Actor metrics

VERTEX	IN-DEGREE CENTRALITY	OUT-DEGREE CENTRALITY	BETWEEN-NESS CENTRALITY	EIGENVECTOR CENTRALITY
OCB Supply Chain	2	11	22.424	0.115
MSF Supply	6	10	22.424	0.115
Mission Supply	6	7	3.767	0.098
Mission Pharma	6	7	35.271	0.091
Project Supply*	7	0	2.367	0.090
Project Logistics	3	5	4.419	0.082
Mission Logistics	6	5	8.090	0.081
Mission Med	4	4	0.800	0.078
KSU	3	4	0.667	0.068
Project Pharma*	5	0	1.200	0.065
Project Med*	3	0	0.000	0.042
OCB Cell*	3	0	1.905	0.035
OCB Logistics	1	3	2.667	0.028
OCB Pharma*	1	0	0.000	0.012
OCB Medical*	-	-	-	-

Note: Actors marked in dark red did not participate in the survey, no data for OCB Medical

RESPONDENTS' PERCEPTIONS

Perceptions on The OCB Supply Chain

The vast majority (77.8%) of respondents considered that the OCB supply chain has a good performance overall, and identified as its key strengths the clarity of communication lines; clarity and feasibility of procedures; allocations of roles and responsibilities within teams and between headquarters and field; and the technical capacity of the human resources involved. Clarity of communication lines was however listed as the main challenge to the performance of the supply chain, followed by timeliness of responses to request; allocation of roles and responsibilities across departments; and efficient delivery and transportation of orders. Additional comments were largely positive, noting how the OCB supply chain is able to respond to needs and deliver what is needed on time. Remarks were made regarding the need to decentralise purchase and procurement functions

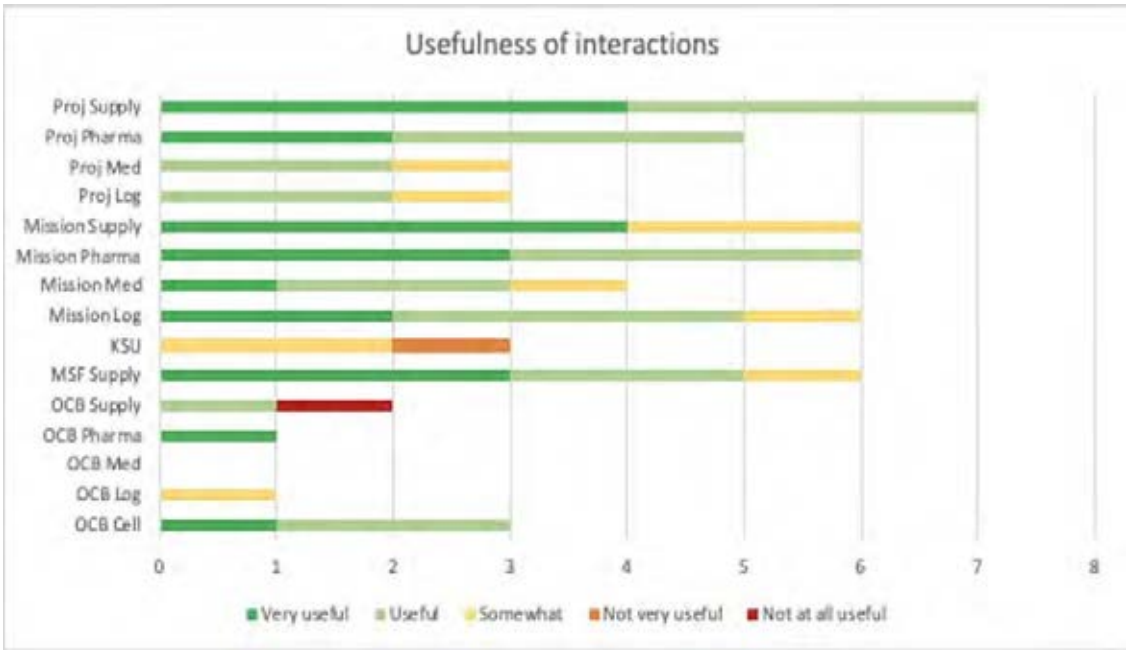
giving more prominence to regional or local approaches; issues related to management tools used for ordering and stocking representing and encoding of certain items; lead times; and need for improved communication and coordination regarding expiry dates for medical products and regarding planning of special orders.

Perceptions on Network Interactions

Survey respondents were asked to indicate about which supply chain related topics their interactions with each other actor in the network were taking place. Overall, exchanges among network actors revolved around three main topics: quantification based on needs, procurement (both local and international), and ordering and validation processes. Taken together, these topics represent 43% of all information exchanged within the network. Mission Pharma was the most consulted actor, regarding almost all supply-chain related topics, with the exception of budgeting and service delivery, while Mission Supply was the second most-consulted actor, covering all topics except rational use of products and HR issues. Project Supply, who is reported on the receiving end of many interactions, was consulted regarding a more limited number of topics, and in particular regarding the three key topics of the network: quantification based on needs, procurement (both local and international), and ordering and validation processes.

Within this network, actors communicate very regularly: only 10% of the interactions take place on a quarterly basis. Almost 30% of the interactions happen on a monthly basis, and this is primarily between MSF Supply and other actors, while one fourth of the reported interactions take place on a daily basis, and as it could be expected these tend to take place within Mission or between Mission and Project staff. The primary mean of communications is email, which covers close to 70% of all exchanges in the network.

Most interactions within the supply chain network were rated positively on all three aspects that respondents were interrogated about, i. e. quality, usefulness and timeliness of interactions. This is represented in Figure 2 below, which shows how interactions with each of the actors in the supply network were appraised by the other respondents who reported engaging with them.



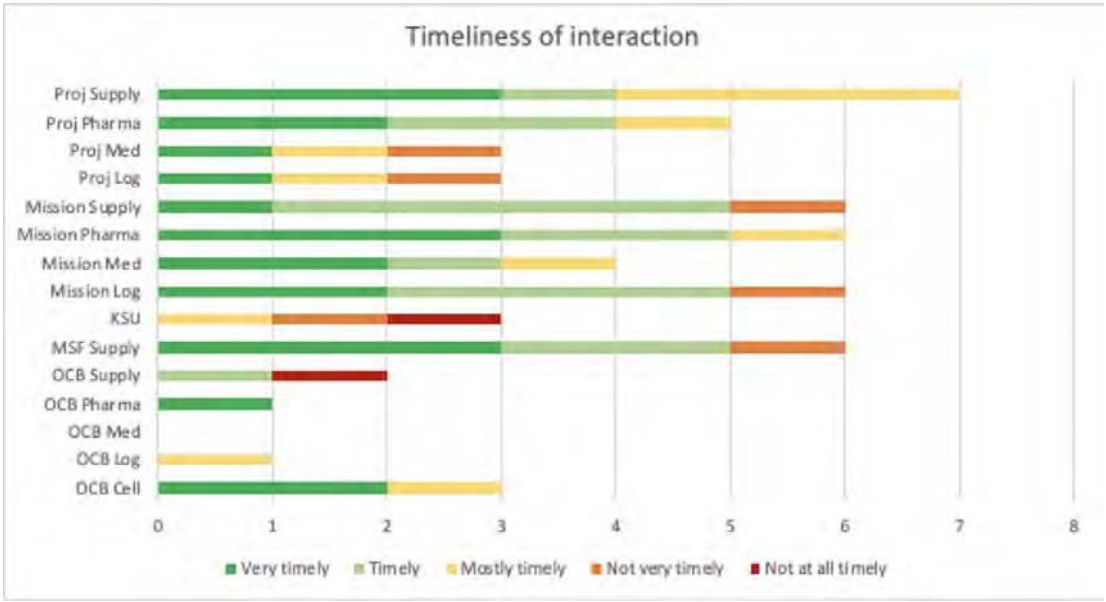


Figure 2. Quality, usefulness and timeliness of interactions

Overall, the vast majority of interactions was rated as being of good or excellent quality (50% and 18% respectively), with only 9% being rated as poor or very poor. An even larger share of interactions was rated as being very useful or useful (38% and 41% respectively), with only 4% being rated as not very useful or not useful at all. Finally, timeliness of interactions was rated generally positively (38% very timely and 29% timely).

On all three aspects, Project ad Mission staff is rated rather positively, with usefulness of interactions being the most appreciated metric, and timeliness the least positively rated overall. In terms of quality of interactions, actors rated most positively were Mission Log, Mission Pharma, Project Pharma and

Project Supply. Regarding usefulness, interactions most positively rated took place with Mission Pharma, Project Supply, and Mission Log. In terms of timeliness, best performing actors were reported to be Mission Log, Mission Pharma and Mission Supply. The KSU was poorly rated by all three actors who reported engaging with them, and across the three dimensions, while engagement with OCB as already mentioned was only reported by two network actors, and with opposing views. As mentioned, a higher response rate would have likely provided more balanced information.

CONCLUSIONS

This social network analysis showed that this network is rather active, with frequent and fluid interaction between most actors. Interactions within this network are rated on average very positively on all three metrics considered, and in particular at Project and Mission level. Closer exchanges take place at mission and project level, with three actors playing a particularly central role in enabling exchanges with the network: MSF Supply, Mission Supply, and Mission Pharma. Overall, OCB HQ, KSU and Project staff appear to be at the outer margins of the network, their interactions being mediated by others. The role of the OCB Supply Chain Department also appears to be relevant, however this was primarily the result of self-reported interactions.

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Médecins Sans Frontières

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