



MSF - OPERATIONAL CENTRE BRUSSELS - **MEDICAL DEPARTMENT**

# OCB MEDICAL ACTIVITY REPORT 2016

MSF-OCB - BELGIUM - BRAZIL - DENMARK - HONG KONG - ITALY - LUXEMBOURG -  
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**OCB Medical Activity Report 2016**

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# INTRODUCTION

The Medical Activity Report of the Médecins Sans Frontières - Operational Centre Brussels has come to its ninth edition. Every year, this report documents OCB medical activities in response to humanitarian emergencies around the world.

MSF is constantly challenged to adapt its action to answer the needs of those most neglected or most vulnerable. How to respond to the health needs of migrants? How to deal with the complexity of providing trauma care in Port-au-Prince or Kunduz? How to adapt our medical response in very unstable contexts like Northern Iraq and Syria? One third of our operational budget is invested for population living in conflict zones. Some of these conflicts happen in middle-income countries where patients were once treated for diseases like diabetes or hypertension. How do we approach the management of these chronic non-communicable diseases in conflict zones or for migrants and refugees?

Antimicrobial resistance and hospital-acquired infections are real challenges in some of our settings. It is important to dedicate resources for infection prevention and control, as well as for antibiotic stewardship and microbiology. This is part of our commitment to provide high-quality care and to insure high patient safety standards. For all our projects we need to look at inputs, processes and outputs with a quality of care framework.

Every page of this report is built on the daily work of MSF staff in the field. It is the synthesis of a common effort towards the achievement of MSF social mission. It covers 22 technical domains, across 81 projects run by OCB in 2016. Edited in the medical department, this report elaborates on the experiences and lessons learnt throughout 2016, it fosters the internal debate on the effectiveness, efficiency and relevance of our interventions, it updates the operational portfolio of OCB and it details OCB medical activities to our partners, donors and to all stakeholders on the global stage.

As the director of the OCB medical department, I would like to express my gratitude to the MSF women and men in the field, for their commitment in keeping our action rooted where it is most necessary. My thanks also go to operational cells of OCB, all OCB headquarter staff and OCB partner sections for their continued support of MSF activities around the world. Special thanks offered to the members of the medical department, for their valuable work during the year and for their kind contribution in compiling this report.

Sincerely,



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# EXECUTIVE SUMMARY

In 2016, Médecins Sans Frontières – Operational Centre Brussels (MSF-OCB) ran medical operations through 40 missions, comprising 81 projects<sup>1</sup>. Overall, 2,223,439 consultations were offered in Out-Patient Departments (OPD), of which 477,009 were for children under five years of age. Also, there were 172,727 admissions to In-Patient Departments (IPD), of which 19,759 were children of 1-59 months and 7,272 were neonates.

Major emergency interventions included i) giving assistance to Internally Displaced Persons, refugees, war wounded and the general population in Syria; ii) responding to the yellow fever outbreak in the Democratic Republic of Congo; iii) providing assistance to the population afflicted by the earthquake in Ecuador and the hurricane in Haiti. The Search and Rescue (SAR) operation for migrants in the Mediterranean also continued. Geographically, activities in sub-Saharan Africa remained at the core of MSF-OCB interventions (Figure).

Overall:

**2,389,242** doses of vaccines were administered.

**241,218** confirmed malaria cases were treated.

**75,474** deliveries, of which 4,706 caesarean sections were performed.

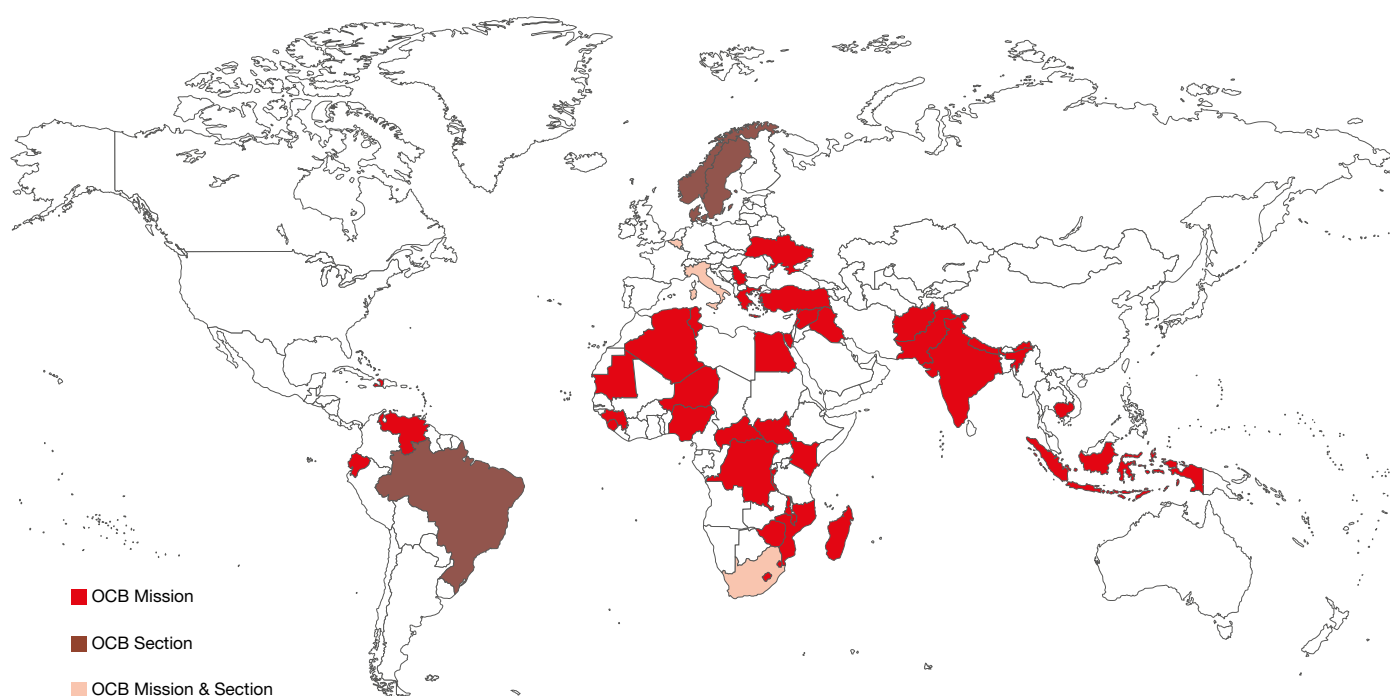
**22,812** new Human Immunodeficiency Virus positive patients were initiated on Anti-Retroviral Treatment, of which 2,048 were children.

**13,446** new surgical cases were operated.

**10,415** people were rescued during SAR interventions in the Mediterranean.

**769** new Multi Drug Resistant Tuberculosis patients were initiated treatment.

Figure: Global OCB sections and missions, 2016



<sup>1</sup> The total number of projects does not take into account 3 projects with no direct medical activities in 2016 i.e. WASH activities in Zimbabwe, flood response in Pakistan, Destination Countries in Belgium.

## 1. YEAR IN REVIEW

2016 was the year of rise and fall of the “Balkan route”, by which refugees, asylum seekers and migrants travelled from Greece to western and northern Europe. This route had constituted the only hope for thousands of people seeking protection. Nevertheless, in March 2016 the European Union (EU) and Turkey issued the EU-Turkey statement, to halt the arrivals. Médecins Sans Frontières (MSF) medical teams witnessed the devastating consequences of this strategy on the lives and health of the thousands of refugees, asylum seekers and migrants trapped on the Greek islands and in the Balkans. MSF Operational Centre Brussels (OCB) also continued to provide primary and specialized medical care (including mental health care) to migrants through the Search and Rescue operation in the Mediterranean Sea, in European arrival countries (Italy and Greece), in transit countries (Serbia), and in destination countries (Sweden). Among other emergencies, the yellow fever outbreak that occurred in the Democratic Republic of Congo (DRC) required the mobilization of considerable resources. OCB supported the response of local authorities by providing more than 1 million doses of vaccine.

Regular OCB projects in 2016 saw an increase of medical activities across a number of domains including vaccination, Tuberculosis (TB), Hepatitis C (HCV), Water, Hygiene and Sanitation (WASH), sexual and reproductive health and chronic non-communicable diseases, whilst other domains such as paediatrics, malaria and nutrition saw a reduction. Mental health and health promotion activities shifted from a vertical to a more transversal and holistic approach, focusing on the relevance of social work. Important achievements have been reached with the introduction of new drugs (Bedaquiline and Delamanid) for Drug-Resistant Tuberculosis patients with limited therapeutic options both in India and South Africa. A total of 95 patients received Delamanid as part of their treatment regimen, representing 20% of the global cohort.

In terms of innovations, new “test and treat” programmes were introduced and new tools such as self-Human Immunodeficiency Virus (HIV) test. Introduction of a new diagnostic test (TB LAM) for the detection of TB in HIV patients with advanced disease and dedicated programmes to reach out to specific populations like sex workers, men having sex with men and prisoners. Furthermore,

new treatment regimens for drug resistant TB and HCV were introduced. A new type of autoclave was developed in collaboration with the Swedish Innovation Unit, in order to improve the quality of the sterilization while decreasing the cycle times and water consumption. The lessons learned from the Ebola “Laboratory Container” were used to design a lighter Viral Haemorrhagic Fever Laboratory set-up which can be easily deployed in remote settings. “Surveillance caravans”, a strategy combining rapid nutritional assessments and mobile clinics in Madagascar, showed a good performance and was accepted by the population. At hospital level, enteral nutrition started in Tabarre (Haiti) and Kinshasa (DRC).

Efforts continued to promote more consistent and standardized tools for the monitoring and reporting of medical programme data. The use of the information system MINOS (Medical Information Network for Operational Support) continued to grow, while the Electronic Medical Records project was initiated with a focus on hospital care. The eHealth unit was created to facilitate medical care and management of health services by providing efficient digital solutions.

Special attention was given to increase and standardize the quality of care in OCB projects. There was a greater focus on ensuring that the essential WASH requirements were in place. Expertise on addressing medical waste management was further developed e.g. for expired drugs and hazardous waste. Standard operational procedures, guidelines and protocols and several interdisciplinary platforms were fostered within OCB, including forming of new units within the medical department. The Health Structures Unit was created to support hospitals more efficiently and continuously improve quality of in-patient care provided by MSF.

Lastly, efforts continued towards the consolidation of coordination mechanisms and communication between headquarters and the field, by increasing the number of field visits and enhancing the support of Mobile Implementation Officers. In order to ensure intersectional coherence, intersectional working groups and numerous trainings were held across different medical domains.

## 2. CHALLENGES AND PROSPECTS

In 2016, the main challenges were related to the evolving complexity of OCB projects (with higher technical needs, higher standards, and increased activities) and to the

complexity of the different contexts where OCB works (in terms of logistics and supply, security, politics and human resources). Additionally, the decrease of nutrition activities is now challenging our internal human resource capacity to conduct nutritional evaluations and responses. The closure of obstetric fistula activities remains also of concern. The high turnover of specialists in surgical care is another limitation challenging our capacity of providing quality care.

Extensive efforts were made in order to improve the quality of data for monitoring and reporting and to standardize indicators. This domain is challenging especially for transversal projects, which require adapted data management tools allowing the longitudinal follow-up of patients.

2017 will look at processes to improve the safety and effectiveness of care e.g. by defining context-adapted good practices of service delivery. Emphasis on the quality of care will remain of paramount importance. This objective marries with the efforts to increase access to quality care, especially in emergency settings. A special focus is on infectious diseases (like HIV, TB and HCV), aiming to universal coverage and incidence reduction. Paediatric care will be reinforced with two new hospitals planned to be opened in 2017. Investments and engagement in chronic non-communicable diseases will continue to increase, especially due to the operational focus in the Middle East and Northern Africa region and the identified gaps in all levels of health care. Psychiatric care for severe mental health disorders will be strengthened and further developed.

In the amendment of OCB operational prospects, some objectives that were identified as priorities were not achieved so far and will require more emphasis. These include antimicrobial resistance; oncological care, in particular in the Middle East; epidemiological surveillance during outbreaks; preparedness for an airborne epidemic with high mortality or for a chemical disaster.

In conclusion, OCB presence in more challenging and complex settings (e.g. conflict areas or settings with limited supply processes), the shift towards community-based approaches, the increase of integrated models of care and the expectations towards MSF as a leading humanitarian organisation will necessitate the development and implementation of more innovative models of care delivery, augmenting needs for operational research.



# LIST OF ABBREVIATIONS

**ACD:** Active Case Detection  
**ACT:** Artemisinin-based Combination Therapies  
**ACT:** Assertive Community Treatment  
**AIDS:** Acquired Immune Deficiency Syndrome  
**ALSO:** Advanced Life Support in Obstetrics  
**AMR:** Antimicrobial Resistance  
**ANC:** Ante-Natal Care  
**ART:** Anti-Retroviral Treatment  
**AS:** Asylum Seeker  
**ASLM:** African Society for Laboratory Medicine Conference  
**ATFC:** Ambulatory Therapeutic Feeding Centre  
**BASIC-DHS:** Basic Assessment and Support in Intensive Care for Developing Healthcare Systems  
**BCG:** Bacille Calmette-Guérin (TB vaccination)  
**BEmONC:** Basic Emergency Obstetric and Neonatal Care  
**BLoC:** Basic Logistics Course  
**bOPV:** bivalent Oral Polio Vaccine  
**BSFP:** Blanket Supplementary Feeding Programme  
**CAG:** Community Antiretroviral Group  
**CAPA:** Corrective Actions and Preventive Actions  
**CAR:** Central African Republic  
**CDC:** Centre for Disease Control  
**CEmONC:** Comprehensive Emergency Obstetric and Neonatal Care  
**CERAH:** Centre d'enseignement et de recherche en action humanitaire  
**CHK:** Centre Hospitalier Kabinda  
**CNCD:** Chronic Non-Communicable Disease  
**COPD:** Chronic Obstructive Pulmonary Disease  
**COPRO:** Comité de Projet  
**CS:** Caesarean Sections  
**CTC:** Cholera Treatment Centre  
**CTC:** Controlled Temperature Chain  
**CTP:** Cognitive Processing Therapy  
**DAA:** Direct-Acting Antivirals  
**DAC:** Development Assistance Committee  
**DBS:** Dry Blood Spot  
**DC:** Destination Country  
**DHIS2:** District Health Information Software 2  
**DOC:** Direct Obstetric Complications  
**DR TB:** Drug Resistant Tuberculosis  
**DRC:** Democratic Republic of Congo  
**DRTB:** Drug-Resistant Tuberculosis  
**DSTB:** Drug Sensitive Tuberculosis  
**EBC:** Espace Bruno Corbé  
**EID:** Early Infant Diagnosis  
**EMC:** Ebola Management Centre  
**EML:** Essential Medicines List  
**EmOC:** Emergency Obstetric Care  
**EMR:** Electronic Medical Records  
**EPI:** Extended Programme on Immunisation  
**EPREP:** Emergency Preparedness  
**EQAS:** External Quality-Control System  
**EUAL:** Emergency Use Assessment and Listing  
**E-Unit:** Emergency Unit  
**EVD:** Ebola Virus Disease  
**FLMT:** First Line Medical Training  
**FP:** Family Planning  
**GAS:** Gynaecology/Anaesthesia/Surgery  
**GDP:** Good Distribution Practices  
**GIS:** Geographic Information System  
**GPP:** Good Pharmacy Practice  
**GTFCC:** Global Task Force for Cholera Control  
**HC:** Health Centre  
**HCV:** Hepatitis C Virus  
**HIV:** Human Immunodeficiency Virus  
**HIV/AIDS:** Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome  
**HMTT:** Hospital Management Team Training  
**HP:** Health Promotion  
**HPV:** Human Papilloma Virus  
**HQ:** Head Quarters

**HR:** Human Resource  
**HRP:** Histidine Rich Protein  
**ICCM:** Integrated Community Case Management  
**ICG:** International Coordination Group on vaccine provision  
**ICT:** Information and Communication Technologies  
**IDP:** Internally Displaced People  
**IMT:** Institut de Médecine Tropicale of Antwerpen  
**IPC:** Infection Prevention and Control  
**IPD:** In-Patient Department  
**IRFFG:** International Reference Field Function Grid  
**ITC:** International Technical Coordination  
**ITFC:** Inpatient Therapeutic Feeding Centre  
**ITM:** Institute of Tropical Medicine in Antwerp  
**ITP:** Isoniazid Preventive Therapy for Tuberculosis  
**IUHPE:** International Union for Health Promotion and Education  
**IWG:** International Working Group  
**KPI:** Key Performance Indicators  
**LAM:** Lipoarabinomannan Assay  
**LLIN:** Long Lasting Insecticide Treated Nets  
**LRTI:** Lower Respiratory Tract Infection  
**LSHTM:** London School of Hygiene and Tropical Medicine  
**LTT:** Logistics Tactical Training  
**LuxOR:** Luxembourg Operational Research Unit  
**M&E:** Monitoring and Evaluation  
**MAST:** Monitoring and Surveillance Tools  
**MD:** Medical Doctor  
**MDA:** Mass Drug Administration  
**MdM:** Médecins du Monde  
**MDR:** Multi-Drug Resistant  
**MENA:** Middle East and Northern Africa  
**MH:** Mental Health  
**MHS:** Management of Health Structures  
**MINOS:** Medical Information Network for Operational Support  
**MIO:** Mobile Implementation Officer  
**MoH:** Ministry of Health  
**MOV:** Missed Opportunities for Vaccination  
**MPH:** Master in Public Health  
**MSF:** Médecins Sans Frontières  
**MSF-OCB:** Médecins Sans Frontières, Operational Centre Brussels  
**MSM:** Men having Sex with Men  
**MUAC:** Middle Upper Arm Circumference  
**MUPS:** Multiple Unexplained Physical Symptoms  
**NCD:** Non-Communicable Disease  
**NDRA:** National Drug Regulatory Authority  
**NET:** Narrative Exposure Therapy  
**NFI:** Non-Food Item  
**NGO:** Non-Governmental Organization  
**NHLS:** National Health Institute  
**NICD:** National Institute of Communicable Diseases  
**NNRTI:** Non-Nucleoside Reverse Transcriptase Inhibitor  
**NOHA:** Network on Humanitarian Action  
**NRTI:** Nucleoside Reverse Transcriptase Inhibitor  
**NTP:** National Tuberculosis Programme  
**OC:** Operational Centre  
**OCA:** Operational Centre Amsterdam  
**OCB:** Operational Centre Brussels  
**OCBA:** Operational Centre Barcelona  
**OCG:** Operational Centre Geneva  
**OCP:** Operational Centre Paris  
**OCV:** Oral Cholera Vaccine  
**OD:** Operating Department  
**OF:** Obstetric Fistula  
**OPD:** Out-Patient Department  
**OR:** Operational Research  
**PBO:** Piperonyl Butoxide  
**PCR:** Polymerase Chain Reaction  
**PCV:** Pneumococcal vaccine  
**PEP:** Post-Exposure Prophylaxis

**PEPFAR:** The United States President's Emergency Plan for AIDS Relief  
**PFA:** Psychological First Aid  
**PHC:** Primary Health Care  
**pLDH:** Parasite Lactate Dehydrogenase  
**PLHIV:** People Living with HIV  
**PLW:** Pregnant and Lactating Women  
**PMTCT:** Prevention of Mother To Child Transmission  
**PNC:** Post-Natal Care  
**POC:** Point of care  
**PODI:** Community Antiretroviral Distribution Points  
**PPD:** Preparation for Primary Departure  
**PREP:** PRe-Exposure Prophylaxis  
**PS:** Patient Support  
**PS:** Psycho-social  
**PSP:** Populations in Precarious Situations  
**PUC:** Pool d'Urgence Congo  
**PWID:** People Who Inject Drugs  
**RBC:** Red Blood Cells  
**RCT:** Randomized Controlled Trial  
**RDT:** Rapid Diagnostic Test  
**REMIT:** Research Impact Monitoring Tool  
**REPEPI:** Response to Epidemics  
**RIC:** Retention In Care  
**RTI:** Respiratory Tract Infection  
**RUTF:** Ready-to-Use Therapeutic Food  
**SA:** South Africa  
**SAC:** Safe Abortion Care  
**SAGE:** Surgery/orthopaedics, Anaesthesia/reanimation, Gynaecology/obstetrics, Emergency/intensive care  
**SAM:** Severe Acute Malnutrition  
**SAMU:** Southern African Medical Unit  
**SAR:** Search and Rescue  
**SEU:** Stockholm Evaluation Unit  
**SFC:** Supplementary Feeding Centre  
**SGBV:** Sexual and Gender-based Violence  
**SMC:** Seasonal Malaria Chemoprevention  
**SOP:** Standard Operational Procedure  
**SORT IT:** Structured Operational Research and Training Initiative  
**SRH:** Sexual and Reproductive Health  
**STI:** Sexually Transmitted Infections  
**SV:** Sexual Violence  
**SVR12:** Sustained Virologic Response at 12 weeks after treatment completion  
**SW:** Sex Worker  
**TB:** Tuberculosis  
**TBA:** Traditional Birth Attendant  
**TME:** Total Malaria Elimination  
**toP:** Termination of Pregnancy  
**toPV:** trivalent Oral Polio Vaccine  
**ToT:** Training of Trainers  
**TT:** Logistics Tactical Training  
**UAM:** Unaccompanied Minor  
**UCL:** University College London  
**UNAIDS:** Joint United Nations Programme on HIV/AIDS  
**UNDP:** United Nations Development Program  
**UNICEF:** United Nations Children's Fund  
**VC:** Vector Control  
**VCAT:** Values Clarification and Attitude Transformation  
**VHF:** Viral Haemorrhagic Fever  
**VIAC:** Visual Inspection Acetic Acid and Cervicography  
**VL:** Viral Load  
**VOT:** Victims Of Torture  
**VWG:** Vaccination Working Group  
**WASH:** Water, Sanitation and Hygiene  
**WATSAN:** Water and Sanitation  
**WHO:** World Health Organization  
**WI:** Working Instructions  
**YF:** Yellow Fever

# A YEAR IN SNAPSHOTS

## BIOMEDICAL EQUIPMENT

- The volume of hospital based medical activities continued to increase in 2016. The introduction of new and more biomedical equipment in the health structures confronted the teams with an increasing demand to follow-up on consumptions, training of end users and specialized maintenances to be done by the manufacturing companies or their distributors.
- A new type of autoclave was developed in collaboration with the Swedish Innovation Unit and a French company (specialized in steam sterilization), in order to improve the quality of the sterilization while decreasing the cycle times and water consumption. Currently, the equipment which was developed specifically for surgical sites doing internal fixations undergoes a pilot phase in Tabarre, Haiti.
- Increasing activities in countries with importation restrictions challenged field teams to deal with the growing problem of counterfeit or low quality medical equipment. As a result, remarkable efforts were made to ensure quality of medical equipment and adequate support from manufacturers.

## CHRONIC NON-COMMUNICABLE DISEASES

- There is an increasing interest and investment in chronic non-communicable diseases (CNCD) in MSF Operational Centre Brussels (OCB). CNCD management in OCB projects mainly included, but was not limited to: cardiovascular diseases, diabetes, asthma, epilepsy and sickle cell disease.
- The first project dedicated to CNCD management has been implemented in the Kibera slum of Nairobi and it will be handed over in 2017. The project allowed development of locally adapted protocols (diabetes, asthma, epilepsy, cardiovascular diseases), documenting experience regarding task-shifting, as well as patient support.
- A new project focusing on CNCD in a rural setting in Embu in Kenya has been prepared during 2016. The aim of this project is gaining further experience on development of adapted service delivery and patient management strategies, as well as roll-out of CNCD management based on a mentoring approach.
- Data collection in CNCD projects remains challenging, as there is no specific data collection tool that allows longitudinal follow-up of patients and cohorts. Development of an adapted DHIS-2 based data management tool including better definition of sets of indicators was initiated in 2016.

## EMERGENCY UNIT

- In 2016, the E-Unit directly intervened in 17 countries, and supported 9 interventions managed by cells (in 8 countries).
- The E-Unit responded to the yellow fever outbreak in the Democratic Republic of Congo (DRC). In Kongo Central province and Kinshasa, the response included mass immunization, vector control, community sensitisation and case management. Overall, more than 1 million people were vaccinated.
- In Burundi, the E-Unit took over ongoing activities from the regular OCB mission following the political unrest in the country. Surgical care was provided (3,669 surgical procedures) and support given to the local Ministry of Health (MoH) responding to the cholera outbreak declared in July 2016.
- Following the earthquake that struck Northern Ecuador, the E-Unit intervened to increase the mental health capacity response of local services and to provide psycho-social and psycho-education support to the affected populations.
- The Destination Countries mission was created. Activities were planned in Belgium and Norway, while an intervention started in Sweden, using a holistic model of mental healthcare and psycho-social support for asylum seekers. In the last trimester of the year, 122 mental health screenings, 62 in-depth assessments and 367 sessions of psychological first aid were provided.
- There were 63 departures to the field during the year, 41 for direct support in emergencies and 22 for support to cells in emergency responses or gap-filling in specific contexts.

## EPIDEMIOLOGY/EPICENTRE

- Epicentre provided epidemiological support for several OCB field interventions e.g. during the yellow fever response in the DRC or during the meningitis season in Niger.
- Key research areas of Epicentre in 2016 included: Ebola Virus Disease (e.g. on the rVSV-ZEBOV trial, aiming to assess the safety and effectiveness of the EVD vaccine); vaccine preventable diseases (e.g. on forecasting the spatio-temporal dynamics of the cholera epidemic in Haiti, after hurricane Matthew, with mathematical modelling); Human Immunodeficiency Virus (e.g. conducting population surveys aimed at measuring Human Immunodeficiency Virus (HIV) prevalence and each step of the cascade of care in Zimbabwe and Malawi); Hepatitis C Virus (e.g. deploying the HCV cohort database, HepaMUD, in India); tuberculosis (e.g. finalising a multi-centric analysis on several cohorts of MSF patients with drug-resistant tuberculosis).

- Research was also conducted in support to MSF operations on malaria, nutrition, antibiotic resistance, diarrhoeal diseases, mental health, surgery, diagnostics, and neglected diseases.
- In terms of training, Epicentre conducted two PSP (Populations in Precarious Situations) and two REPEPI (Responding to Epidemics) courses. Also, it supported the preparation of a course on «Responding to emergencies and epidemics» in Afghanistan.

## EVALUATION UNIT

- The Stockholm Evaluation Unit followed twenty-one dossiers and completed sixteen reports (eleven for OCB, one for the MSF Operational Centre Amsterdam (OCA) and four were inter-sectional).
- The Stop Stock Out evaluation in South Africa and the evaluation of the Victims of Torture (VoT) projects focused on new programmatic areas for MSF. Both evaluations established that MSF is very successful in adapting to new challenges, although specific technical expertise needs to be strengthened.
- Real time evaluations, such as the one in Niger, offers a valuable opportunity for learning and accountability, not only because it lends itself to a 'light' process, but because findings can be more quickly incorporated into decision making. Therefore, 'Real-time' (developmental) evaluation approaches will continue to be tested to provide more timely feedback and input to operational decision making.

## HEALTH INFORMATICS

- In 2016, the medical data collection tools for standardised monitoring and reporting of medical programme data were Epicentre tools (Epitools) for outpatient and inpatient departments and gynaecology/obstetrics services, the Medical Information Network for Operational Support (MINOS), and a number of Excel and Epidata-based tools for collecting patient-level non-aggregated data. Out of 81 projects, 15 used MINOS and 3 used Epitools.
- The eHealth Unit was created, consolidating several medical Information & Technology-based services.
- The Electronic Medical Records project was initiated, focusing on hospital management and on supporting the management of patient flow. Pilots will be run in the HIV project in Kinshasa (DRC) in the first half of 2017, and in the Tabarre trauma centre (Haiti) at the end of 2017.
- MINOS will migrate from its original platform to the more robust solution called DHIS2, an open source software for the reporting, analysis and dissemination of data for all health programs.



## HEALTH PROMOTION AND SOCIO-ANTHROPOLOGY

- Health promotion (HP) activities were conducted in 45 projects across 26 missions. These projects included 9 migration interventions projects, 7 emergency interventions projects and 29 regular projects.
- Over the past few years, the humanitarian landscape and MSF's operational choices (such as the migrant projects) had an impact on the HP component. As a result, HP gradually shifted from a vertical approach to a much more holistic approach that took into consideration the different determinants of health and factors that influenced OCB operations.
- There is also an increased diversification of the support provided to the field through different departments and an enthusiasm to create platforms for collaboration.

## HIV/TB/HCV

- OCB stabilised the number of HIV care and treatment in 18 projects across 10 countries. Tuberculosis (TB) activities were run in 13 vertical TB/Drug-Resistant TB (DRTB) and HIV/TB projects and in 6 transversal projects. HCV-testing and treatment activities were implemented in 3 OCB projects.
- KwaZulu-Natal (South Africa) has been championing large scale rural community HIV testing strategies for several years while in other places (Nsanje, Gutu) it has been left to other implementers. In urban projects, strategies of targeting key populations were implemented.
- A total of 22,812 patients were initiated on Anti-Retroviral Treatment (ART) in 2016, including 2,048 children. The number of patients on second line ART remains very small (<10%) illustrating the shortcomings of Viral Load (VL) strategies, which induces long delays in switching first line therapy to a second line in our projects.
- The target of VL suppression is 90% which most projects achieve. Viral load outcomes were generally worse in children compared to adults and varied widely between projects.
- A total of 4,877 TB patients were detected and started on treatment during the year; out of these 764 were Drug Resistant TB cases.
- TB treatment outcomes for patients with Drug Sensitive TB (DSTB) were reported from only 7 projects, for 1,810 patients. Average success rate of DSTB treatment was 69%. Treatment success rate for the cohorts of Khayelitsha (South Africa), where co-infection rate with HIV is very high, and Mumbai (India), where mainly pre-extensively drug resistant tuberculosis (XDRTB) and XDRTB patients are enrolled, was respectively 44% and 64%.
- There has been a huge scale up of Isoniazid Preventive Therapy (IPT) for TB among HIV patients in Gutu (Zimbabwe): in collaboration with the MoH, 3,164 eligible HIV patients have been started on 6 month of IPT, demonstrating its feasibility in co-infected HIV/TB patients. It is however in general poorly implemented in other projects.

- Important achievements have been reached in terms of introduction of new drugs, Bedaquiline and Delamanid, for DRTB patients with limited therapeutic options, both in India and South Africa. Also a new diagnostic test (TB LAM) was introduced for the detection of TB in HIV patients with advanced disease.
- For HCV treatment, Direct Acting Antiviral (DAA) agents were introduced, which can be given in a short course of 3 to 6 months, with treatment success rates up to 95%.

## INFECTION AND PREVENTION CONTROL

- In response to the rapidly growing problem of antibiotic resistance, and in order to coordinate MSF's common commitment to this dossier, the Medical Operations platform created a specific task-force on Antimicrobial Resistance (AMR). This task-force received a mandate to develop a detailed roadmap to improve the capacity to prevent, detect and manage AMR in MSF projects. In 2016, a finalised roadmap was presented and approved, to be implemented over a period of four years. Three main topics were identified as priorities: i) antibiotic stewardship and rational antibiotic prescription; ii) diagnostic tools and AMR surveillance; iii) Infection Prevention and Control (IPC).
- In 2016, visits were conducted to projects in Guinea, Mauritania, Haiti, Kenya, Afghanistan, Central African Republic, Sierra Leone, Haiti and Turkey.
- In the contexts MSF operations there is often a deficiency of trained IPC personnel. Therefore, MSF-OCB requested from all hospitals to create an IPC Officer position (national or expatriate staff). In June 2016, OCB had an IPC Officer in 11 out of 15 hospitals.
- The IPC team contributed to development of standard construction plans for prefabricated structures (e.g. Gaptek), for the purpose of renovating and/or constructing health structures in the field (e.g. Doro, South Sudan) and to design a mobile surgery unit.

## LABORATORY

- Laboratory activities were supported in 30 projects across 16 countries.
- The lessons learned from the Ebola "Laboratory Container" were used to design a lighter Viral Haemorrhagic Fever Laboratory set-up which can be easily deployed in remote settings. Its fine tuning for field deployability is planned to be re-assessed and improved.
- The use of Point-Of-Care (POC) tests is greatly advancing with increased task shifting of the testing services to lay workers (nurses and counsellors). However, proficiency testing to POC tests conducted by lay workers ought to be provided, as it is the responsibility of the laboratory to assure quality of the results.
- There is an intention of OCB to acquire field experience and build knowledge on bacteriology, on sepsis in particular, although not exclusively. This will allow better identification and assessment of sepsis and related conditions seen in MSF clinics and hospitals.

## MALARIA

- During the course of 2016, a total of 463,880 rapid diagnostic tests were performed in OCB projects and 52% of these were positive.
- The total number of confirmed malaria cases treated in OCB projects was 241,218 (27% less than 2015). Nevertheless, about 91% of all malaria cases were treated in 3 missions: in DRC (36%), Central African Republic (22%) and South Sudan (33%).
- The roll out of the use of injectable artesunate, a first-line treatment for severe malaria in MSF projects was completed. While rectal artesunate remains one of the most effective and safe pre-referral treatments for severe malaria at the peripheral healthcare level, this form of artesunate administration is still under-used in OCB projects.
- The implementation of preventive tools such as Long Lasting Insecticide Treated Nets (LLINs) was further reinforced. However, due to emerging resistance to pyrethroids, OCB switched to piperonyl butoxide treated bed-nets, as a transitory measure until new generation of bed-nets become available.

## MEDICAL STRUCTURES AND HOSPITAL MANAGEMENT

- There were 19 medical structures in OCB. Four of the structures were general hospitals, eleven of the facilities included service/disease specific activities (HIV/TB, sexual and reproductive health (SRH) and trauma centres), whereas four facilities have hospital based activities related to the support of primary health care for refugees in camp settings.
- The number of beds in OCB medical structures remained stable at 1,100 beds. There were 11 structures with up to 50 beds, 5 facilities with 50-100 beds and 3 hospitals with more than 100 beds.
- The total number of staff working in In-Patient Departments (IPDs) is increasing every year and to date there are 4,322 national and 207 expatriate staff.
- In order to support hospitals and large medical structures more efficiently, a new Health Structures Unit was created late 2016. The overall objective of this Unit is to continuously improve quality of care of the patients within MSF hospitals.

## MENTAL HEALTH

- In the first semester of 2016, projects with a Mental Health/Psycho-social component remained stable at 53 projects. However, during the second semester this decreased to 36 projects as either projects closed down or were an emergencies/short term interventions.
- There were only six emergencies/short term interventions. These included clinics for Ebola Survivors and three interventions after natural disasters in Ecuador, Haiti and Indonesia, with only Burundi being related to acute conflict.
- The strategies with migrants changed in Europe, switching from Psychological First Aid (PFA) to clinical Mental Health (MH) interventions for stranded migrants. More projects were developed in the Middle East and North

Africa targeting migrants, including Tunisia, Turkey and two new projects in Lebanon. In addition, there was a focus on destination countries in Europe with the development of a model of care in Sweden.

- Clinics for Ebola survivors were developed in Sierra Leone, and a new one opened in Conakry, Guinea, with a short term intervention in Focariah. This was guided by study results from Liberia which showed a relative high prevalence of mental disorders, especially depressive disorders and Post Traumatic Disorders amongst the survivors.
- Psychiatric care continued in general to be developed within OCB.

## MIGRATION IN EUROPE

- In 2016, OCB teams performed a total of 46,718 out-patient (OPD) consultations in Greece and 39,801 in Serbia.
- In May 2016, OCB implemented a multi-antigen vaccination campaign, targeting the children living in Idomeni camp (Greece) and in the nearby smaller makeshift camps. In 5 days a total of 3,031 children were vaccinated.
- A fixed clinic was opened at Lesbos Island (Greece) to offer care for CNCDs, SRH and MH at the end of September.
- MSF has been carrying out Search and Rescue (SAR) operations in the Central Mediterranean since May 2015. During 2016, The Bourbon Argos, MSF OCB vessel, rescued a total of 10,415 persons. After rescue while on board, migrants had access to emergency care, primary medical care, SRH care and PFA.
- The centre for rehabilitation for VoT and other forms of ill-treatment in Rome, offered high quality interdisciplinary care for a cohort of 62 beneficiaries.
- The project (Migrants on the Move) is carried out thanks to the coordination with local authorities and networks of local volunteers in Como, at the frontier with Switzerland and in Ventimiglia at the border with France.
- From a medical perspective, a main challenge in migration projects was the difficulty to ensure continuity of care for such a mobile population. The impact of medical activities was hard to measure as most of the activities were having a "single shot" character.

## NUTRITION

- In 2016, most of nutrition activities were integrated into regular projects, while a few large vertical nutritional projects were closed down.
- The provision of quality care for severely malnourished children remained at the core of MSF nutritional response. Special attention was given to increase opportunities of vaccination for children in nutritional programmes.
- Overall, OCB supported 29,982 beneficiaries in its nutritional activities (preventive and treatment programmes).
- In Borno state, Nigeria, OCB re-joined other operational centres to scale up the existing response in this food insecure area.

- In Ituri, Bunia (DRC), ambulatory and intensive nutritional care were provided to refugees arriving from South Sudan. The intervention is still running.
- With regards to HIV and TB – which are important underlying diseases related to malnutrition - screening, diagnostic and treatment tools have been introduced in the nutrition protocol and need to be put in practice by 2017.
- Enteral nutrition started in the HIV project in Kinshasa (DRC) and in Tabarre (Haiti) trauma centre, to answer nutritional needs at hospital level. These activities are under evaluation for a possible scale up.

## OPERATIONAL RESEARCH AND DOCUMENTATION

- Operational research and medical data support visits were conducted in various countries including Egypt, Serbia, Italy, Greece, Lebanon and Cambodia.
- Additional support was given to medical data systems for the subjects of torture, sexual violence, mental health, migrants and hospital care.
- The Structured Operational Research and Training Initiative (SORT IT) scaled-up globally. By December 31st 2016, a cumulative total of 467 participants completed SORT IT courses in 85 countries.
- Adapted SORT-IT initiatives were implemented in Egypt and Lebanon (project staff national OR course) and the first qualitative research SORT-IT in Johannesburg.
- Publications are a recognized scientific indicator of successful study completion and reporting. This continued to be high with 126 OCB-supported publications in 2016. Types of publications included perspectives and viewpoints, original research and short reports covering 17 themes.
- A step further is to bring research to the level of policy and practice change. Unfortunately this did not start of well in 2016, but will re-start in 2017 with an additional person.
- In order to improve coping with growing demands for operational research, an interactive model was developed that fosters sharing of research portfolios and improved communication at operational level and between team members.
- The MSF Field Research website ([www.fieldresearch.msf.org](http://www.fieldresearch.msf.org)) continued to archive MSF-authored publications from the entire MSF movement. Since 2010, there were over one million cumulative downloads around the world.

## PAEDIATRIC CARE

- 477,009 OPD consultations were conducted in 30 OCB projects or interventions in 16 countries for children less than 5 years of age; whereas, 19,759 were admitted to IPDs in 15 OCB projects in 9 countries.
- OPD morbidity patterns for children under five

years of age were similar to previous years: respiratory tract infections (42%), malaria (19%) and non-bloody diarrhoea (15%). The most prevalent causes of hospital mortality were severe malaria (55%), sepsis (11%), lower respiratory tract infections (8%) and severe acute malnutrition (7%). A total of 586 consultations were done for vaccine-preventable diseases, of which measles, mumps, chickenpox, and pertussis, were, the most frequently reported.

- For the first time, data on IPD care for children 5 to 14 years is included in the report, with 2,091 exits and 36 deaths over the year. Severe malaria was the top morbidity also in this age group, accounting for 55% of all exit diagnoses. There were 7,272 exits from OCB-run inpatient neonatal services and 953 neonatal deaths, in 10 projects in 6 countries. Major contributors to inpatient neonatal mortality were prematurity/low birth weight (47%), intrapartum related events (26%) and neonatal sepsis (10%).
- Paediatric TB is underdiagnosed and undertreated in MSF programmes and needs urgent attention, especially for acutely malnourished children.

## PHARMACY

- The year 2016 was marked by the implementation of the harmonized article codification rules adopted by all of MSF, embodied by UniData (MSF's central supply article database), having impacted the organization of pharmacies and medical stocks.
- The emergencies in Syria, DRC and Central African Republic, including the increased activity in countries with constraints of importing drugs and material such as South Africa, Kenya, Ukraine, Pakistan, India and Lebanon, continued to represent significant challenges to the medical supply chain.
- The total OCB medical expenditure for medicines, vaccines, small medical supplies, medical equipment and kits in 2016 was 25.4 million of euros, of which 20.1 million were procured through MSF Supply. An additional 0.9 million was spent on therapeutic food, mainly in South Sudan, DRC and Haiti.
- In the first three years of the Good Distribution Practices implementation pilot phase - which ended in December 2016 - 12 missions have been assessed: 25 medical stocks implemented corrective actions and preventive actions and about 200 staff (medical, logistic and supply profiles) have been trained at field level.

## SEXUAL AND REPRODUCTIVE HEALTH

- Compared to 2015, overall sexual and reproductive health activities have increased.
- Large maternities as Khost, Kabul and Timergara continued to increase their overall number of deliveries.
- Ten projects covered 93% (70,605) of total deliveries. This was similar to caesarean section, with ten projects covering 97% (4,586) of these procedures.
- The total number of projects offering antenatal care (ANC) decreased from 20 to 19 and the overall number of first ANC consultations decreased by 20%.



- Six projects were responsible for 87% (29,641) of the total volume of postnatal consultations (PNC). Similarly to 2015, Masisi and Kabul projects reported the highest volume of PNC consultations and activities continued to increase.
- The total number of family planning (FP) consultations increased by 29% from 2015 (59,456 FP consultations done in 2016).
- Requests for terminations of pregnancies almost doubled from 258 in 2015 to 550 in 2016. In 2016, 66% of those requests were referred to external services.
- No fistula campaigns were organised since the vertical obstetric fistula care project in Gitega, Burundi was closed in 2015. Several projects have been referring patients to partner organisations.
- Care for victims of sexual violence was provided in 20 projects, offering consultation to a total of 3,489 victims.

## **SURGICAL CARE**

- Surgical care in OCB consisted mainly of life-saving and essential surgery, with a focus on trauma-related surgery and high-standard orthopaedic care. Surgical care was provided to victims of violence (e.g. in Bujumbura, Burundi) and in the context of epidemics (e.g. during the typhoid fever epidemic in Mukedi, DRC).
- By the end of 2016, there were 14 projects offering surgical care. During the year, 13,446 primary interventions (new cases) were performed. Violent trauma as an indication for surgery decreased from 14% in 2015 to 10% in 2016. The closure of Kunduz project could explain this.
- OCB provided anaesthesia in 22,958 interventions (accounting for 26,579 surgical procedures). Eighty-nine per cent of caesarean sections were conducted under spinal anaesthesia. This excellent level of anaesthesia provision was higher than 2015.

- Emergent cases (22,185) represented 97% of all surgeries, similarly to 2015.
- Out of the 22,958 entries into the operating department, 46 intra-operative deaths were reported (0.2%).
- OCB also continued its operational strategy of developing trauma-related surgery with provision of high-standard orthopaedic care.

## **TORTURE AND OTHER FORMS OF ILL-TREATMENT**

- In 2016, OCB ran three vertical OPD clinics for the rehabilitation of Victims of Torture (VoT). All offered a comprehensive package of care through multidisciplinary teams composed of psychologists, medical doctors, cultural mediators, physiotherapists and social workers. In 2016 OCB VoT teams performed a total of 18,745 individual consultations.
- 1,462 new VoT cases were admitted to MSF clinics. The most frequent methods of torture were physical trauma, psychological torture, positional torture and detention in inhumane conditions.
- Each of the VoT projects is dependent on a local referral network to specialist care providers such as inpatient psychiatric care and advanced diagnostics. In addition, legal support is offered to beneficiaries through partner organizations.

## **VACCINATION**

- Five reactive mass vaccination campaigns were organized in 2016 and all in DRC; four to respond to measles epidemics and one to respond to a yellow fever epidemic. Nine preventive mass vaccination campaigns were also launched in six countries.

- A total of 2,389,242 doses of vaccine were administered within MSF. This was more than double the number of administered doses in previous years. This sharp increase was mostly linked to a massive preventive vaccination campaign following the yellow fever epidemic in DRC (1,083,433 persons vaccinated) and to the launch of a multi-antigens catch-up vaccination campaign in Central African Republic.
- More than one fourth of the doses (28%) were given in reactive mass vaccination campaigns and almost half of them (45%) were given in preventive mass vaccination campaigns. The remaining 26% of doses were administered in routine vaccination programs, while 2% of the doses were used for post-exposure prophylaxis.

## **WATER, SANITATION AND HYGIENE**

- In 2016, a better balance was found between the attention given to curative care and the emphasis given to preventive Water, Sanitation and Hygiene (WASH) activities.
- The yellow fever outbreak in DRC was a significant challenge and required considerable WASH support to manage the vaccination campaign, but more importantly to define appropriate preventive vector control activities.
- The WASH unit was reinforced with additional human resources to scale up proximity to emergencies and to deal with the expected increased load of recruitment and pool management.
- A WASH-IT course will be developed based on the SORT-IT model in collaboration with LuxOR so as to capitalise on MSF's opportunities and further upgrade the evidence base in the WASH sector.

# BIOMEDICAL EQUIPMENT

## 1. OVERVIEW

In 2016, the volume of hospital based medical activities increased in Médecins Sans Frontières Operational Centre Brussels (MSF-OCB). The introduction of new and more biomedical equipment in the health structures confronted the teams with an increasing demand to follow-up on consumptions, training of end users and specialized maintenances to be done by the manufacturing companies or their distributors. More activities in countries with importation restrictions also challenged field teams to deal with the growing problem of counterfeit or low quality medical equipment. As a result, efforts were increasingly made to ensure quality of medical equipment and adequate support from manufacturers.

## 2. PROGRAMME ACTIVITIES

### 2.1. TECHNICAL SUPPORT

A new type of autoclave was developed in collaboration with the Swedish Innovation Unit and a French company specialized in steam sterilization. Currently, the equipment which was developed specifically for surgical sites doing internal fixations is in a field-testing phase in Tabarre, Haiti. The device was developed to improve the quality of the sterilization while decreasing the cycle times and water consumption. The initial results are promising.

The growing set of supporting documents and tools have been reorganized and posted online in 2016. A new policy around quality assurance and management of medical equipment was developed and awaits final approval.

The Biomed Portal, the main tool for management and follow-up has been introduced in several big missions and has already proved to be an added value. The Biomedical Equipment Management Guideline states a mission must have the following minimum requirements to be able to independently manage its biomedical equipment:

- All equipment users must be familiar with how to operate the equipment and the daily maintenance needs. The manuals must be readily available in the appropriate language.
- One or more technicians must be trained and made responsible for the monitoring of the equipment.

- Maintenance must be planned for and carried out as recommended.
- How to conduct maintenance workshops must be planned for and undertaken.
- All maintenance activities must be recorded within the Biomed Portal.
- Stocks of spare parts must be maintained by ensuring punctual inventories and follow-up on orders within the Biomed Portal.

### 2.2. FIELD VISITS

Many field visits were requested in 2016. The referents visited the missions in Lebanon, Haiti and Malawi while the Mobile Implementation Officer (MIO) provided technical support to the health structures in Grand Bangui, M'Poko and Bangassou in Central African Republic (CAR); Centre Hospitalier Kabinda (CHK) and Masisi in Democratic Republic of Congo (DRC) and in Guinea. Other supporting visits were undertaken by Biomed Quality Assurance Officer in Mozambique, Malawi and the referent of CAR and Burundi.

## 3. INTERSECTIONAL COLLABORATIONS

The Biomedical Contact Group has developed greater visibility and influence in MSF through biannual meetings, sharing of information, an intersectional division of tasks, ensuring presence in other medical working groups and combining project visits with other units or sections. The biannual meetings include the Diagnostic Imaging Working Group aiming to improve the use and maintenance of radiology equipment.

## 4. TRAINING AND HUMAN RESOURCES

The informal trainings on the ground which were tailored to the contextual needs of the projects/missions represented a significant part of the biomedical training agenda. The formal trainings included:

- Two five-day biomedical training courses were set up in collaboration with all other sections. These were held at the Espace Bruno Corbé (EBC) training centre in Brussels. Priority was given to national staff, but expatriates involved in hospital logistics or who were preparing for a referent position were accepted as well.
- The biomedical equipment module was included in the Preparation for Primary Departure (PPD) course.
- A biomedical equipment module was also included in the Hospital Management Team Training (HMTT), the First Line Medical Training (FLMT) and the Logistics Tactical Training (LTT).
- A new position was opened for an intersectional radiology engineer and the recruitment is planned for 2017.



# LESSONS LEARNED IN 2016

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- The engagement with the end users and analysing their needs showed that focus must be given to the implementation of infection control measures and safe use of biomedical equipment. Furthermore, quality assurance needs to be incorporated across a larger spectrum which includes the different medical and transversal specialities.
- Hospital based medical field teams were confronted by an increasing number of patients requiring highly specialized care. Yet it is difficult to keep a good balance between what is needed and feasible within countries lacking the supporting services for certain diagnostic and specialized care equipment. We are therefore trying to set limits to the complexity of the technology we introduce.
- The importation restrictions in some countries obliged us to start looking at a clear framework which assessed the quality of the equipment bought locally. However, as the market for medical equipment is flooded with counterfeit and low quality equipment, subsequently a very bad support is provided by the local suppliers.
- The challenges of long delays encountered when equipment is sent to Brussels for repair still needs to be resolved in collaboration with MSF Supply. Nonetheless, more autonomy has been given to the field regarding arrangements with local representatives of manufacturers in handling maintenance and/or calibration after expiry of the equipment's warranty period.

## PROSPECTS FOR 2017

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- Focus will be given to risk assessments and design of mitigation strategies in relation to medical equipment. The risks to patients, users and medical programs will be taken into account.
- A structured solution must be found for the after sales service that we want to provide to the field.
- A series of supporting documents to be released in 2017 include:
  - Biomedical Policy and Guideline for OCB.
  - An additional set of user and maintenance protocols for standard MSF medical equipment.

# CHRONIC NON-COMMUNICABLE DISEASES

## 1. OVERVIEW

There is an increasing interest and investment in chronic non-communicable diseases (CNCD) in Médecins Sans Frontières-Operational Centre Brussels (MSF-OCB); hence a specific chapter on CNCD has been added to the OCB Medical Activity Report. CNCD management in MSF projects mainly included, but was not limited to: cardiovascular diseases, diabetes, asthma, epilepsy and sickle cell disease (where relevant). Increased interest in CNCD is triggered by the operational focus in the Middle-East where CNCD burden is high. Additionally, poor access to treatment for CNCD patients is recognized, at both primary and secondary level of care.

There had been an increasing number of requests for support from the medical department, on patient management choices, strategic and programmatic aspects of CNCD management, but also on adapted data management tools.

Some projects have been evolving into projects with more resources dedicated specifically to CNCD management, in order to optimize the quality of care as well as to generate experience and knowledge.

There are several categories of projects where CNCDs are addressed, although facing different challenges: refugees in the Middle East are looking for continuation of treatment; hospital projects are confronted with patients with complications of CNCDs in need of acute, but also long-term management; and primary health care projects in areas with increasing awareness about CNCD burden.

## 2. PROGRAMME ACTIVITIES

The first project dedicated to CNCD management, with the aim of increasing MSF experience in precarious urban setting, has been implemented in the Kibera slum of Nairobi. CNCD component was included, over a period of five years, to an existing large primary health care project and will be handed over to Ministry of Health (MoH) in 2017. This programme allowed development of locally adapted protocols (diabetes, epilepsy, cardiovascular diseases, asthma and chronic obstructive pulmonary disease), documenting experience regarding task-shifting, as well as patient support. However, some topics, such as insulin management, could not be addressed. Capitalization and evaluation of this project will be of great importance.

A new project focusing on CNCD in a rural setting in Embu in Kenya has been prepared during 2016, and the proposal was validated. The aim of this project is gaining further experience on development of adapted service delivery and patient management strategies, as well as roll-out of CNCD management based on a mentoring approach in the second phase.

During the planning phase of a new project in rural area of Mutare district in Zimbabwe, discussions on gaps of access led to the inclusion of a CNCD component and its implementation started in 2016. About 100 new CNCD patients are registered monthly, with a focus on hypertension and diabetes.

Projects addressing refugees from and in the Middle-East have been confronted with numerous patients requesting continuation of treatment already initiated before they presented at MSF clinics, as well as with more complex cases that require secondary or tertiary level of care. Strategies of CNCD patients management depend largely on the context, presence and activities of other actors and referral possibilities, but also the on the level of autonomy MSF has in these settings. The main challenge however, is to streamline patient management and ensure continuity of care.

The project in the Shatila refugee camp (Lebanon) offers more opportunity for steering the management choices and documenting the activities.

In Out-Patient Department (OPD) hospital in Ahmed Shah Baba (Afghanistan), of the large number of patients treated (average 8,500 per month), a significant proportion are patients with CNCD (an average of 300 hypertension and 450 diabetes patients per month).

Other projects also include CNCD treatment, although without having a specific focus on these (e.g. IPD/OPD in Pakistan, India).

Data collection in CNCD programmes remains challenging, as there is no specific data collection tool that allows longitudinal follow-up of patients and cohorts. Having that in mind, from the available data it is often not possible to distinguish follow-up consultations from new patients, thereby making it unclear as to how many patients are being followed.

Development of an adapted District Health Information Software 2 (DHIS-2)-based data management tool including better definition of sets of indicators was initiated in 2016. This tool is currently in the pilot testing phase, and has the potential for more detailed analysis.



## LESSONS LEARNED IN 2016

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- Whilst avoiding vertical projects on CNCDs, ensure an appropriate scope of the projects where the CNCD component is well supported, documented and evaluated.
- Defining the most appropriate screening and inclusion criteria for patients with risk factors such as hypertension and hyperglycemia, to be managed pharmaceutically, remains challenging. This should be evidence based, rational, and considering the time frame of the intervention.
- The need for adapted data management tools, with a core-set of indicators, is urgently needed to allow outcome analysis of the project in terms of adherence to treatment, and (proxy) outcome indicators.
- Instead of support being sought from the Medical Department for specific technical issues (validation of drugs and diagnostic tests), more attention should be given to the strategic choices regarding CNCD component inclusion in early stages of the projects. More experience and tools for assessment in the CNCD frame are needed.
- The need for technical and strategic support is increasing; therefore the Medical Department has to increase its capacity to respond.

## PROSPECTS FOR 2017

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- The appointment of a full-time CNCD referent (April 2017) will enable the Medical Department to offer appropriate support and increase the capacity for project capitalization and evaluation in order to generate lessons learnt. This will also provide the capacity to support further development and refining of context-based protocols and guidelines, as well as support for more complex issues such as insulin-dependent diabetes and advanced in-patient management of CNCDs.
- Further implementation of projects initiated in 2016 should provide the opportunity to gain more experience with service delivery strategies, integration in primary and secondary care and good practices documentation. This refers particularly to the projects in Kenya, Zimbabwe, Lebanon and Afghanistan. Although, other projects addressing CNCDs are expected to contribute.
- Variety of experiences will further contribute to the definition of context adapted good practices regarding service delivery, management of diseases and risk factors, patient support, data management including monitoring and evaluation.
- New data management tools should provide more detailed description of patient characteristics, monitoring and evaluation, as well as successes and challenges documentation.

# EMERGENCY UNIT

## 1. OVERVIEW

The emergency unit (E-Unit) oversees the direct management of emergency projects and supports emergency interventions run by the operational cells through provision of experienced human resources and/or technical support. In 2016, the E-Unit directly intervened in 17 countries and supported nine interventions (in eight countries) managed by cells.

While continuing the assistance in Syria, Lebanon and Turkey, the major responses in 2016 included: i) intervening for the Yellow Fever (YF) outbreak in the Democratic Republic of Congo (DRC); ii) continuing the crisis response in Burundi; iii) supporting several projects for asylum seekers in and around Europe; iv) intervening in the aftermaths of the earthquake in Ecuador with Mental Health (MH) capacity building; and v) responding to the hurricane that devastated Haiti in October 2016. Some of these are discussed in detail below.

## 2. PROGRAMME ACTIVITIES

### 2.1. SUMMARY OF EMERGENCY ACTIVITIES IN 2016

Over the course of 2016, 24 interventions (direct or providing support) were performed by the E-Unit (Table 1). These included management of disease outbreaks, nutrition, care for Internally Displaced Persons (IDP) due to conflicts and natural disasters, care for refugees and care for war-wounded. In addition, 4 assessments were done in 2016 in (i) Eritrea (ongoing), exploring the general context and possibilities for a long-term intervention, (ii) Nigeria, where a project started at the end of 2016 in Borno State (emergency) and in Anambra State (long term intervention), (iii) Tanzania, for Burundian refugees (no intervention) and (iv) Kurdistan, in the war context of Mosul, where an intervention started in 2017.

### 2.2. SOME OF THE EMERGENCY RESPONSE ACTIVITIES IN 2016

#### 2.2.1. DEMOCRATIC REPUBLIC OF CONGO (YELLOW FEVER)

Following the spread of YF from Angola, in February 2016 the first confirmed case was notified in Kongo, Central province, DRC, followed by confirmed cases in Kinshasa in July.

The emergency team arrived in the country in April with the following 5-pillar operational strategy:

**Table 1: Emergency activities managed by the E-Unit (direct and support), 2016**

Managed by the E-Unit	Reason for intervention	Comments
<b>Lebanon</b>	Connected to Syria conflict; refugees focus	Ongoing since 2011; handed over to cell 6 in Aug 2016
<b>Syria/Turkey</b>	Conflict setting, support project, general pop. needs	Ongoing since 2012; handed over to cell 6 in Aug 2016
<b>Democratic Republic of Congo</b>	Yellow Fever	Matadi (3 months), Kinshasa (5 months)
<b>Sierra Leone</b>	Ebola	1 months
<b>Burundi</b>	Conflict/crisis	Since May 2016; ongoing
<b>Libya</b>	War context	Remote control and support; stopped Sep 2016
<b>Niger</b>	Meningitis	3 months
<b>Nepal</b>	Earthquake	End of intervention Dec 2015
<b>Ecuador</b>	Earthquake	2 months
<b>Haiti</b>	Cyclone	From Oct 2016 to Feb 2017
<b>Madagascar</b>	Nutrition	6 months
<b>Greece, Search and Rescue</b>	Asylum seekers	2016
<b>Med. Sea, Search and Rescue</b>	Asylum seekers	Handed over to cell 2 at the end of 2015
<b>Tunisia</b>	Asylum seekers	Ongoing
<b>Destination Countries</b>	Asylum seekers (Sweden, Belgium, Norway)	Ongoing; Sweden, Norway started in 2016; Belgium started in 2017
<b>Support given by the E-Unit to cells and/or other sections</b>		
<b>Burundi</b>	Malaria, Kayanza	1 months; human resources & strategy, no intervention
<b>Burundi</b>	Crisis	4 months before taking it over; human resources & strategy
<b>DRC</b>	Cholera	2 months; human resources
<b>South Sudan</b>	Cholera	1 month; human resources
<b>South Sudan</b>	Conflict (Pibor)	2 months; human resources
<b>Niger</b>	Measles	3 months; human resources
<b>Mozambique/Malawi</b>	Internally displaced people & nutrition	8 months; human resources
<b>Turkey</b>	Migration	2 months; human resources
<b>Venezuela</b>	Crisis	Strategy support

- Vector control activities as mechanical elimination of larva site production around a case location, insecticide use for elimination of larva around a case location, in-house spraying at case location and special spraying (fumigation).
- Support to case management in the hospital structures, defined as referral centres for YF cases. Direct or indirect case management was ensured including provision of case management kits and training of staff for the hospitals along the border with Angola.
- Community sensitisation about YF including information about the vaccination and the vector control activities.
- Disease surveillance, including participation in investigation of suspect cases.
- Mass immunisation activities in Matadi and in Kinshasa.

The team divided the response into 4 projects, 2 including case management and vector control activities and 2 vaccination projects to support the Ministry of Health (MoH) vaccination plan. The activities lasted from May to September 2016.

### Results by project

Kongo Central province, with case management, vector control and community sensitisation (from May to July):

- Support given to 5 referral hospitals and 2 health centres; free access for patients ensured through the provision of human resources, drugs and material for case management; training of staff; referral system put in place.
- 33 sessions of out-door spraying performed; destruction of larva site production in 17 locations; 19 rooms receiving indoor spraying; monitoring of vector control activities followed by Geographic Information System support.
- 13 areas targeted with community sensitisation.

- 7 trainings on case management conducted (92 participants).

Matadi town (Kongo Central province) mass immunisation activity:

- 10 days' campaign; 391,928 target population (children below 9 months of age, pregnant women, immune-depressed patients excluded); use of Amaril vaccine from Sanofi and from Chumakov – supplied by the International Coordination Group (ICG) on vaccine provision.
- 373,054 people vaccinated; 95.2% administrative coverage; 97.5% survey coverage.

Kinshasa project with vector control, sensitisation and case management (from May to September):

- 70 suspected patients (11 confirmed) treated at the supported referral hospital.
- Outdoor spraying covering 132 hectares; 587 sites of larva production mechanically destroyed and 335 destroyed with larvicide; indoor spraying in 8 health structures, 4 churches, 2 schools and 12 private structures.
- 7,158 households reached by sensitisation.

Kinshasa mass immunisation activity:

- 10 days' campaign; 787,024 target population from 3 health zones (children below 9 months of age, immune-depressed patients excluded); use of Amaril vaccine from Sanofi and from Chumakov – supplied by the ICG; 94 team/site of vaccination.
- 710,379 people vaccinated; 90.7% administrative coverage (Table 2); 97.0% survey coverage (79% covered by Médecins Sans Frontières, MSF vaccination, 20.8% by MoH and 0.2% others).

### 2.2.2. BURUNDI MISSION

Following the political unrest in the country, in July 2015 Médecins Sans Frontières Operational Centre Brussels (MSF-OCB) began supporting surgical care for patients who were victims of violence. MSF also provided

emergency response according to needs and access (i.e. mainly support during the 2016 cholera outbreak). The country mission was handed over to the E-Unit on May 1st, 2016.

### Arche Trauma Center in Kigobe area, Bujumbura

The Arche Trauma Center, an originally private health structure, started with offering trauma orthopaedic services in July 2015. In April 2016, accidental trauma patients were also admitted including a limited number of burn cases. Arche became a hospital with a 75-bed capacity including an intensive care unit, 2 operating theatres for orthopaedic and general surgery, an X-ray unit, a laboratory, an outpatient service for orthopaedic cases, an emergency room service, physiotherapy and psycho-social services.

Results:

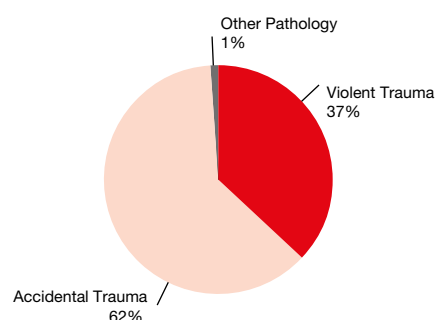
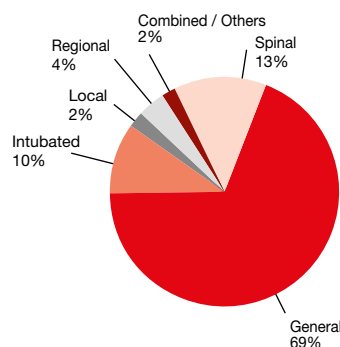
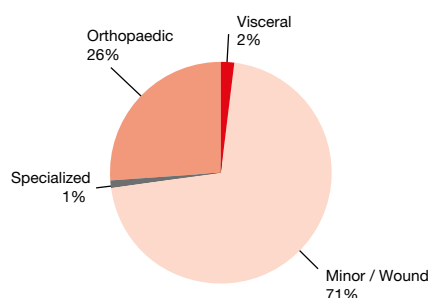
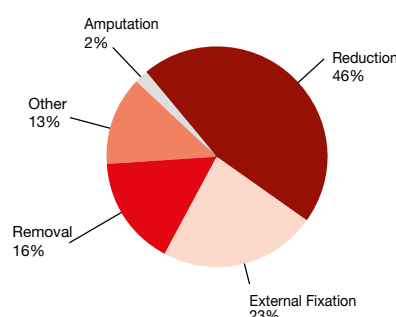
- 4,839 admissions in the emergency room.
- 3,195 admissions in operating theatres and 3,669 surgical procedures (892 new cases) (Figure 1, page 22).
- 543 admissions in the intensive care unit.
- 1,902 patients hospitalized and 10,976 followed at out-patient department.
- 1,495 X-rays performed (service available from November 2016).
- 11,237 kinesytherapie sessions.
- 1,160 patients followed and provided with psycho-social support.

With regards to the degree of urgency, of the 3,195 admissions in operating theatres, 499 (15.6%) were urgent cases and 2,696 (84.4%) were delayed (100% of emergent cases). Four cases of intra-operative death were reported (0.1%). Eight-hundred and ninety-two (27.9%) were primary interventions, 2,292 (71.7%) planned and 11 (0.4%) unplanned re-interventions. Out of the 892 primary interventions, 216 (24.2%) were female and 676 (75.8%) male. The patients' average age was 27 years.

Table 2: Target population and administrative coverage of the Kinshasa mass immunisation activity

Health zone	Total target	People vaccinated	Vac. coverage 9-24 months	Vac. coverage >24 months	Vac. coverage total
Biyela	233,824	235,631	133.3%	98.4%	100.8%
Kikimi	300,511	267,366	124.1%	85.9%	89.0%
Kingasani	249,110	207,382	99.5%	79.7%	83.2%
<b>Total</b>	<b>783,445</b>	<b>710,379</b>	<b>119.0%</b>	<b>87.7%</b>	<b>90.7%</b>



**Figure 1: Surgical care performed at the Arche Trauma Center in Kigobe area, Bujumbura, 2016****Causes of intervention (new cases)****Types of anaesthetics****Types of surgical procedures****Types of orthopaedical procedures (946)**

In relation to the physical status of the patients, out of the 3,195 entries in operating theatres, 2,878 (90.1%) were ASA 1 (patient in apparent good health notwithstanding his surgical problem), 255 (8.0%) ASA 2 (patient with mild systemic disease), 55 (1.7%) ASA 3 (patient with systemic disease severe enough to limit activity but not incapacitating), 4 (0.1%) ASA 4 (patient with severe incapacitating disease that is a constant threat to life), and 3 (0.1%) ASA 5 (patient not expected to survive 24 hours with or without surgery).

Out of the 892 primary interventions, 14 (1.6%) cases developed surgical site infections. However, this indicator should be interpreted with caution because of several biases involved. For example, it is not always possible to follow the post-operative patients until 30 days after surgery (as they can be early discharged). Furthermore, there might be cases of non-notification and also case definitions might be understood differently from surgeon to surgeon.

**Cholera intervention**

In July 2016, the MoH Burundi, declared a cholera outbreak in Bujumbura province. The four provinces affected were Bujumbura Mairie, Bubanza, Makamba and Rumongue. The team started working in Bujumbura Marie by supporting the building of a Cholera Treatment Center (CTC) which was subsequently handed over to MSF Operational Centre Ge-

neva (OCG). In addition, a CTC was set up in Bujumbura centre where 57 cases were admitted and zero deaths reported. Support to the MoH continued for case management and in several other areas for the provision of water supply and disease surveillance.

On December 30th, another cholera outbreak was suspected and announced. MSF intervened to set-up a CTC and to provide support on case management (Cibitoke province) in 2017.

**2.2.3. ECUADOR POST-EARTHQUAKE INTERVENTION (MENTAL HEALTH)**

A 7.8 magnitude earthquake struck Northern Ecuador on Saturday April 16th 2016 at 7pm local time. The epicentre was 27 km from the small coastal town of Muisne (west of the Province of Esmeraldas). The worst damage was reported in the village of Pedernales (population of 55,000), which was declared a 'disaster zone'. Access was limited due to damages to infrastructure. The government declared a 'state of exception' for 6 provinces. On the day after the earthquake, authorities reported 238 deaths (85% in the province of Manabi), 1,557 injured and many buildings and roads destroyed or damaged. On May 11th, 660 counted deaths and 28,911 sheltered. MSF sent an exploration team composed of log-watsan and medical staff including mental health specialists.

There was a major need to provide mental health support to this population affected by the natural disaster since this aspect was not adequately covered by local and regional helpers. Although the intervention encompassed Water and Sanitation (WATSAN) activities and Non-Food Item (NFI) distributions, it mainly aimed to increase the mental health capacity response of local services and to provide psycho-social and psycho-education support as a first response to the earthquake.

**Mental health activities context and description**

After the first meeting with MoH & the Operational Emergency Committee in Quito, Ecuador capital, and knowing that the MSF Operational Centre Barcelona (OCBA) MH team would act in Pedernales and its surroundings, OCB MH team defined its target population i.e. psychologists & other health professionals, teachers, social workers, community leaders and inhabitants of the area. MoH informed OCB that before the earthquake there was a gap of 95 psychologists in the health system and that the government was planning to contract 5 new ones for the emergency which was however insufficient to meet people's needs. On the other hand, while looking for psychologists in other public sectors, the E-Unit established that some of them were working for the Ministry of Social and Economic Inclusion, the Ministry of Justice and Ministry of Education in the other cities. In order to compensate for the lack of psychologists, the MoH decided to send health workers (and among them psychologists from non-impacted areas in the country) to support local teams. Because the local MH referral system was found to be very fragile, the E-Unit decided to involve not only psychologists, but also health workers, teachers, social workers, community leaders and also informed the affected population about local referral possibilities.

With health workers, we acted on the importance of finding coping strategies, psycho-education on MH expected reactions and identification criteria. We also cautioned them about the importance of avoiding medication and also to be careful on early diagnosis. When working with university teachers the objective was to provide Training of Trainers (ToT) on MH strategies in disasters, psycho-education and psycho-social group management. With primary & secondary school teachers, the objective was to provide them with psycho-education skills and

to support them organizing recreation activities and positive group activities and to offer spaces for families to build emergency plans. Social workers who were working mainly for the Ministry of Social and Economic Inclusion, were trained to identify possible physical and psychological reactions and to provide information about positive coping mechanisms. Working with the community leaders, included psycho-education, especially on community awareness on expected MH reactions, strengthening participation in the community dynamics and conflict management. During the work on psycho-social groups, the OCB MH team worked with children and adolescents in order to allow them to ventilate their emotional reactions and to retake some social activities. With mothers and the elderly, the aim was to strengthen family's identity, to improve relaxation, to promote social interactions and to support them to deal with sexual health/family planning. Although individual psychological support was not an objective of the OCB MH team, exceptions were accepted on demand. Overall, capacity building (519 participants), psycho-social groups (750 participants) and psycho-social individual sessions (12) were performed in April-May 2016.

One of the recommendation from the team at the end of the intervention was to monitor capacity building results and follow-up on data raised by the health team on emotional reactions for 6-8 weeks after the disaster. After some weeks, a team of two contacted the beneficiaries of these activities, with the aim of assessing their impact and to observe the situation in terms of medical needs. A total of 75 people were interviewed and the results summarised below.

- Shelters had better management of conflicts, organization, hygiene and living conditions. Furthermore, the community were more involved and mobilized to solve common demands. There was improvement on leadership skills and children were back to school.
- The teachers felt they were able to offer support to students and replicate MSF trainings. There was good relationship with the students' parents.
- Health and social workers felt more motivated than 3 months before in finding strategies to cope with the lack of infrastructures following the MSF trainings. Staff at health centres was given advice on how to protect them in case of a new earthquake.

- Religious people (based on 1 response) indicated they were dealing well with the situation, together with the youth who participate in religious groups.
- People interviewed reported that MSF activities are very useful to deal with bad feelings after earthquake.

## 2.2.4. DESTINATION COUNTRIES MISSION (ASYLUM SEEKERS, MENTAL HEALTH)

Analysis on Destination Countries (DCs) started with the Migration Task Force in 2015. Assessments were done in Sweden and Belgium and meetings conducted with partner sections. The Migration Task Force was stopped and the E-Unit was requested to continue MSF work in DCs for 2016. As of July 1st, a Comité de Projet (COPRO) was agreed. The DC mission was created and COPROs for the Sweden project, Belgian project and Norway assessment team were presented.

### Belgium

The team started planning the intervention with a MH care focus and proposed one location in the north and one in the south of the country. Planned activities included psycho-social screening, referrals and monitoring of mental health conditions, linking with civil society and an important advocacy component. Activities started in 2017.

### Norway

A team from the Norwegian office conducted an assessment from September 2016 to February 2017. The objective was to identify whether and where MSF could play a role in providing health care in the broadest term for migrants, refugees, asylum seekers and undocumented migrants in Norway. The team was engaged in a desk review, bilateral meetings and participation in seminars. Key areas of interest were medical, in particular, mental health, advocacy, civil society, communications and administrative aspects.

### Sweden

In Sweden, MSF uses a holistic model of mental healthcare and psycho-social support which involves: the screening and detection of mental health conditions and referral to the Swedish healthcare system as appropriate; individual and group counselling sessions; psycho-education to help prevent deterioration of symptoms and also to build resilience and engender empowerment; provision of psychological first aid; and the use of cultural

mediators to ensure good communication. The project also links asylum seekers with community-based civil society networks that offer social activities and provide for their non-medical needs.

Through this project, MSF aims to show that early interventions can actually improve asylum seekers' mental health and ensure that they are received in a way that caters for their individual needs. MSF also wants to build on the success of this project to advocate for the improvement of mental health services for asylum seekers across the country.

Mental health screening is proposed to all asylum seekers in the area of intervention. The aim of this first level screening is to rapidly assess the mental health conditions of the clients. If a client's score is at or above a cut-off, it is considered as positive and consequently MSF counsellors propose an in-depth assessment at second level which may be conducted immediately after or upon appointment. The in-depth screening consists in a semi-structured interview. MSF counsellors assess each item that scores very high and they further explore potential traumatic life-events, resilience and coping mechanisms as well as functionality reduction.

This system of triage allows MSF staff to categorize clients into those that require low/mild level of psycho-social support or more intensive psychiatric/psychotherapeutic help. For the last category, MSF supports referral to primary health care services for diagnosis/treatment by qualified psychologists or psychiatrists. In Sweden, the referral of victim of torture or extreme violence to the Red Cross trauma centre can only be done by the medical doctor at primary health care services. In the case of Un-Accompanied Minors (UAMs), referral is done through the social services.

MSF proposes the following package of activities for clients who need low/mild level of psycho-social support.

- Psycho-education group sessions which aim to educate clients about the science behind mental health, to reinforce participants' coping mechanisms, to promote mental health services and to identify clients in need of more specialized care. During the sessions, different topics such as normal stress reactions to abnormal situation, stress management, sleep disorders, psychosomatic problems and trauma can be addressed. For example, some people from rural areas hold the Djinn – a supernatural creature – responsible for their

moods and MSF counsellors explain them that symptoms like sleeplessness and depression are biologically based and can be treated.

- Basic individual or group counselling, aimed to support clients with non-severe mental health conditions and to prevent the development of mental health problems or disorders, encouraging positive coping mechanisms.
- First psychological aid which according to Sphere (2011), Inter-Agency Standing Committee (2007) and World Health Organization (WHO, 2011) describes a human, supportive response to a fellow human being who is suffering and who may need support and is based on the principle of “not doing harm”.
- Health information and cultural briefing about Sweden.

Results from September to December 2016, Gotene:

- 122 mental health screening (first level).
- 62 in-depth assessments (second level).
- 23 referrals to primary health care (mental health).
- 4 referrals to social services (mental health/UAM).
- 2 cases supported for own self-referral (psychiatric care).
- 39 individual counselling.
- 78 follow-up interventions.
- 367 sessions of psychological first aid.
- 224 group of psycho-education.
- 242 group of health information/cultural briefing.
- 256 recreational activities.

An important part of the project is the creation of tools for training and care. A cultural briefing (following the origins of the clients) for care providers is also part of the model. Activities are ongoing in 2017 and the project

aims to finalize the intervention for documentation of the model by August 2017.

### 3. EMERGENCY PREPAREDNESS

In 2016, the Emergency Preparedness (EPREP) in Burundi was revised for cholera and war-wounded. Support was also given for the implementation of EPREP in Greece.

### 4. HUMAN RESOURCES AND TRAINING

In 2016, the E-Unit had four permanent emergency coordinators and increased permanent support staff from 3 to 5 (2 human resources HR, 1 Logistic/Supply and 2 Finance). Additionally, the Syria task force continued to be embedded in the E-Unit although this was terminated in August after the creation of Cell 6 and the handover of the Syria intervention to the new cell. At head quarter level, 2 staff provided ad hoc support for part of the year.

The number of field emergency coordinators (medical and non-medical) remained at approximately 10 to 15 throughout the year. Up to December 2016, the field team had covered 63 departures, 41 for direct support in emergencies and 22 for support to cells in emergency responses or gap filling in specific contexts. The coordinators from the E-Unit continued to be part of trainings as facilitators and/or trainers throughout the year, but more so during the Head of Mission and/or Medical Coordinator trainings and the Populations in Precarious Situations (PSP) training. Furthermore, during 2016 the coordinators participated in various meetings/congresses on Ebola. Emergency Medical Team meetings organised by the World Health Organization were also followed by the E-coordinators as external observers or as technical support.

### 5. COMMUNICATION AND E-UNIT

The E-Unit contributed to specific communication initiatives to increase operational

visibility and leverage. Major communication initiatives were done for the YF intervention, the Syrian besieged areas and the asylum seeker interventions.

### 6. E-UNIT WORKSHOP JANUARY 2016

A 4-day workshop was organised early January 2016. The meeting was intended for all head quarter and field emergency coordinators. The discussions held during those 4 days were as follows:

Day 1. Capitalisation of the E-Unit; who we are, what we do, what to do better (including E-Unit history and set-up). Presentation from the Middle East and Northern Africa intervention and the Burbon Argos history. Open discussion (mainly with directors and coordinators of operations), about “tomorrow collaboration” and “challenges on new contexts”.

Day 2. Different topics on “main updates – new tools – new challenges”. Discussions on ‘El Nino’ phenomenon; new supply/finance tools; shelter solutions update; vaccination and main changes; new rapid assessment guideline update; logistic news and information & technology security tools and plans for 2016-17.

Day 3. Mainly dedicated to medical topics: malaria/dengue/chikungunya (epidemic vs emergency – rapid diagnostic test – vector control tools); staff health update; Human Immunodeficiency Virus (HIV) and Tuberculosis (TB) updates for possible use in emergency.

Day 4. “Training” on analysis, strategy & influencing workshop. Discussion with the communication department on “new communication environment”.

This was a very interesting and useful workshop which allowed updating for all the members of the team and exchanging within the E-Unit and the departments. It will be repeated every 2-3 years.

### 7. LOOKING BACK AND AHEAD

## MAIN CHALLENGES/ACHIEVEMENTS IN 2016

- The dust has almost settled on the largest Ebola outbreak ever recorded. Despite the end of the outbreak, work continues to learn the lessons and prepare for the next epidemic. There has been a flurry of activity within OCB and the wider movement to document the outbreak, build on the medical and technical advances and address the failures of the enormous MSF response. Close collaboration with the other sections is ongoing to ensure the best possible response in the future.



- The ongoing issues with receiving visas for Burundi meant that the E-Unit had to spend more time and energy than normal in preparing the mission to run without international staff in some key positions.
- Following 4 years of managing projects related to the Syrian conflict from a task force within the E-Unit, 2016 saw a handover of Turkey-Lebanon-Syria activities to the newly formed Cell 6. Whilst management of longer term projects has become more frequent within the E-Unit, the magnitude and duration of the Syrian crisis led to a large and consistent draw on the Unit's resources.
- Closing the nutrition project in Madagascar was a long, drawn out affair due to the complexities associated with the original emergency memorandum of understanding, payment of importation tax for the start of the intervention and exportation of some investment materials at the closure.
- Migrations continued to be a challenge in 2016. Building on experience gained in the Central Mediterranean, the E-Unit deployed teams to Greece to respond to the flow of people fleeing the Syrian conflict via the Greek islands. The search and rescue response to reduce mortality during the crossing from Turkey to Greece necessitated a different approach from the central medical response; for this the E-Unit initially collaborated with Green Peace, who has extensive experience in small boat operations. This developed into an MSF-only operation with boat pilots recruited and our own boats designed, built and deployed. Training of in-house pilots was also carried out to ensure the possibility of rapid deployment in future operations needing these skills.
- Following discussions with MSF South Africa it has been decided to have the possibility of detached E-Unit positions there, following the Scandinavian model.
- The E-Unit now has a dedicated WATSAN expert assigned to support emergency work.

## DOSSIERS STARTED IN 2016 AND ONGOING IN 2017

- Medical / Operation perspective: revision of scenarios and emergency stock; paediatric toolbox for primary and secondary health care in emergency; HIV/TB and non-communicable disease care in emergency; aerial disease pandemic preparedness; finalization of exploratory guidelines; sexual and reproductive health toolbox revision; flood manual revision; reporting forms in emergency; data collection in emergency; malaria and vaccination in emergencies.
- Medical / Water, Sanitation and Hygiene (WASH) perspective: a toolbox for WASH in emergency; tool for quick assessments; research on equipment with easier hand-over of water supply systems; research on WASH intervention for scattered populations.
- Human Resources dossier: revision of the toolbox HR for emergency; analysis of the first mission departures in emergencies and Omer for emergency.
- Supply perspective: need to prepare a supply toolbox for each phase of emergency (phases 1 and 2 emergency and post-emergency set up); need to finalize a toolbox on exit strategy by involving all departments.
- Logistic side: several innovation dossiers are ongoing especially on information & technology development; others include different discussions on shelter availability for medical structures (MFH 2nd version, Risk 3rd version, and other possibilities for shelters) and meetings with the log back-office. Other challenging dossiers include Rapid 'Telecom' Deployment Kit, Rapid 'Supply Tools' in Emergency, New way of 'Off Road Shifting'.
- Finance perspective: a toolbox for head quarter (i.e. simplified table for day-to-day expenditure); toolbox for project level (i.e. budget file for emergencies by phases); toolbox for the field (like the HR tool, which can support finance in an emergency intervention during different phases); tool for field visits (check-list and reporting).

## PROSPECTS FOR 2017

- The training and support for EPREP will be continued in particular in contexts where emergency scenarios are anticipated.
- The collaboration with external specialists (Orthopaedist International Association, Renal Disaster Relief Task Force, Handicap International, and Disaster Epidemiology Centre) will be continued and strengthened.
- The collaboration with the Pool d'Urgence Congo will be continued. A visit will be conducted and support on the surveillance system provided.
- The level of 10-15 mobile team members will be maintained throughout 2017.
- The preparation of the E-coordinators on security and risk analysis management will be continued.
- Follow-up of the impact of food security crisis will be ensured.
- Emergency response training in Kabul to be conducted.

# EPIDEMIOLOGY EPICENTRE

## 1. OVERVIEW

Epicentre's epidemiological studies support Médecins Sans Frontières (MSF) with evidence to improve their interventions and medical care. The three main areas of work of Epicentre's studies include: research in emergencies, support to MSF program monitoring activities and research designed to enhance operational strategies, preventive, curative and diagnostic tools and protocols. Results may be used to support advocacy in the scientific community, local, national and international authorities. The Epicentre scientific team comprises of epidemiologists, statisticians and laboratory specialists. In 2016, two epidemiologists were integrated into the MSF Operational Centre Brussels (MSF-OCB) Medical Department so as to enhance communication and facilitate the implementation of new research projects.

## 2. ACTIVITIES

### 2.1. RESEARCH IN EMERGENCY SETTINGS

In 2016, Epicentre provided epidemiological support for several MSF-OCB field interventions (Table 1). In the Democratic Republic of Congo (DRC), Epicentre epidemiologists supported the investigation of a yellow fever outbreak and evaluated the response provided by MSF-OCB in Matadi, Kongo Central, and Kinshasa. In Kunda, Maniema, Epicentre conducted a vaccine coverage and vaccine effectiveness survey following successive measles vaccination campaigns conducted by the Ministry of Health (supplementary immunization activities) and by MSF-OCB. In addition, Epicentre reinforced the data collection and surveillance system during the meningitis season in Niger. Epicentre also provided tools for the harmonization of data collection (e.g. on meningitis patients) across all MSF sections.

### 2.2. SUMMARY OF OTHER RESEARCH CONDUCTED IN 2016

The key research areas of Epicentre include the Ebola Virus Disease (EVD), vaccine preventable diseases, diarrhoeal diseases, mental health, surgery, diagnostics, antibiotic resistance, nutrition, Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome (HIV/AIDS), Hepatitis C Virus (HCV), tuberculosis, malaria and neglected diseases. During 2016, MSF-OCB collaborated on a number of these research activities.

Table 1: Epicentre/MSF-OCB field interventions in 2016

Country/project	Intervention	Topic
DRC, Kongo Central	Outbreak investigation + vaccine coverage survey	Yellow Fever
DRC, Kinshasa	Outbreak investigation + evaluation of case management and vector control	Yellow Fever
DRC, Maniema	Vaccine coverage and effectiveness survey	Measles
Niger	Data collection support during meningitis season	Meningitis

#### 2.2.1. Ebola Viral Disease

In 2016, Epicentre developed a database for EVD survivors and supported the organisation of data collection and analysis for the MSF-OCB EVD survivor project in Freetown, Sierra Leone.

Epicentre also continued supporting the sharing of pooled MSF intersectional data, internally for publications led by MSF-OCB or other MSF-OCs, as well as externally through the Ebola Initiative-Oxford agreement.

In 2016, Epicentre progressed with the data analysis of the 2015 rVsV-ZEBOV trial aiming to assess the safety and effectiveness of the vaccine among Guinean frontline health workers. Final results on the immunogenicity and safety of the vaccine are expected to be published in 2017. In continuation, Epicentre developed a generic protocol for a single arm, open-label, non-randomized, phase IIIb trial of one dose of rVsV-ZEBOV against the Ebola virus disease. The primary outcome is to assess overall vaccine effectiveness in preventing laboratory-confirmed EVD cases. This study will provide additional evidence to support the obtainment of Emergency Use

Assessment and Listing (EUAL) or licensure from the Food and Drug Administration for rVsV-ZEBOV. As the location of future outbreaks is unforeseeable, the preparation of the trial implementation takes place in several countries (including Guinea, Sierra Leone, and DRC), each under the responsibility of one MSF-OC<sup>1</sup>.

#### 2.2.2. Vaccine preventable diseases

After Hurricane Matthew hit Haiti<sup>2</sup> in October 2016, mass vaccination campaigns with Oral Cholera Vaccine (OCV) were conducted in response to the increased number of cholera cases observed in the affected area. Using the available country data (e.g. surveillance data and anticipated rainfall), Epicentre, with the « École Polytechnique Fédérale de Lausanne », applied mathematical modelling to forecast the spatio-temporal dynamics of the cholera epidemic at the departmental level, accounting for the impact of the OCV campaign. The results were translated into operational recommendations to guide health actors involved in the cholera response in Haiti in designing appropriate OCV vaccination strategies. Two reports have been shared

<sup>1</sup> Countries that would fall under the responsibility of MSF-OCB include DRC, South-Sudan, possibly Guinea and Gabon.

<sup>2</sup> In the Grande-Anse department and Le Sud department.

and a dashboard for visualisation of the data has been developed and made available online<sup>3</sup>. Further modelling work will be conducted in 2017 to assess different vaccine strategies for elimination of cholera in Haiti and hopefully to apply the forecast model in real-time during the next cholera season.

In 2015, Epicentre and MSF-OCB implemented a study to assess the heat stability of the measles vaccine in real field conditions in the DRC. The results showed that the vaccine is quite stable in the lyophilized form but quickly loses its potency once reconstituted and kept at elevated temperatures. In 2016, basing on these results, the Access Campaign, MSF-OCB and Epicentre have continued to work with the vaccine manufacturer and regulators to evaluate the stability of the measles vaccine in the controlled temperature chain. The study notably continued with the analysis of laboratory stability data.

### 2.2.3. HIV and Hepatitis C Virus

In 2016, results of several HIV studies were communicated at various fora. The main results of the HIV population survey conducted in KwaZulu-Natal, South Africa were published (Hueriga et al<sup>4</sup>). In addition, the results of HIV incidence among young women (KwaZulu-Natal) were presented at the 21st international AIDS conference<sup>5</sup> as well as the preliminary results on the association between Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTI) exposure, viral load suppression and the emergence of resistance in HIV-infected patients receiving rifampicin (CARINEMO<sup>6</sup> study<sup>7</sup>)<sup>8</sup>. Furthermore, the final results of the study on the performance of HIV rapid diagnostic tests in five African countries (including MSF-OCB sites in Conakry, Guinea) were reported. Publications are ongoing.

In 2016, Epicentre and MSF-OCB implemented two population surveys aimed at

measuring HIV prevalence and each step of the cascade of care in Gutu (Zimbabwe) and Nsanje (Malawi). The surveys were completed in December 2016 and data analysis is ongoing. Preliminary results were shared internally in early 2017.

In Mozambique, in 2016, Epicentre and MSF-OCB, together with MSF-OCG, South African laboratory partners<sup>9</sup> and the Ministry of Health, developed a study protocol to investigate (i) the prevalence of pre-treatment drug resistance among HIV patients initiating Anti-Retroviral Treatment (ART), (ii) the frequency of virological failure among adult patients receiving first-line ART; (iii) and the adherence challenges faced by these patients in Maputo city and Tete Province, where the proportion of patients with ART treatment failure is suspected to be extremely high. After obtaining the relevant ethical clearances, recruitment is expected to start by June 2017 and patient follow-up will last for about two years. This study will combine a cross-sectional design (including follow-up) with a qualitative approach and is expected to disentangle the role of acquired drug resistance from the role of poor treatment adherence. Anticipated results include improving patient management and counselling strategies to maximize the effectiveness of first-line ART treatment.

Also in Mozambique, Epicentre supported the development of a database, of standardised reporting format and standard operating procedures for a study on PRe-Exposure Prophylaxis (PREP) among sex workers in Beira.

In 2016, the MSF-OCB participation in the intersectional UNITAID cohort study on the introduction of a new HCV treatment for HIV patients was put on hold following changes in the HCV activities in the Kibera (Kenya) and Mumbai (India) projects. Low serological HCV prevalence was observed during the exhaustive HCV testing in the Kibera HIV

cohort. A manuscript including these results is under preparation. In 2016, Epicentre continued to support the MSF-OCB HCV project in Pakistan (Karachi), in partnership with MSF Luxembourg Operational Research (LuxOR), and in India (Meerut) with the deployment of the HCV cohort database (HepaMUD), development and ethical submission of cohort study protocols and regular data management. In 2016, Epicentre also organised an intersectional training in Cambodia to facilitate exchange between the different HCV projects and to train participants (including MSF-OCB staff) on HCV program monitoring and the HCV database.

### 2.2.4. Malaria

In the research area of malaria, in 2016 an article on the evaluation of the time taken for three malaria rapid diagnostic tests to become negative after successful treatment in children under five years of age in Uganda was published (Grandesso et al<sup>10</sup>). Also, the final Polymerase Chain Reaction (PCR) analyses conducted in Bamako<sup>11</sup> were obtained for the study evaluating the efficacy of three Artemisinin-based Combination Therapies (ACT)<sup>12</sup> for the treatment of uncomplicated malaria in children under five years of age in Maradi (Niger). The three ACT showed good efficacy and can be recommended as first-line treatment. The final results and report were shared with the Malaria Working Group. Lastly, the results of the evaluation of the efficacy and bioavailability of Artemether-Lumefantrine in severely malnourished children compared to those non-severely malnourished<sup>13</sup> were presented at the ASTMH<sup>14</sup> 65th Annual Meeting and published (Denoeud-Ndam et al)<sup>15</sup>.

### 2.2.5. Tuberculosis

In the absence of Randomized Controlled Trials (RCTs) to assess new treatments for (mul-

<sup>3</sup> The online version of the dashboard is available at: <https://epicentre-msf.shinyapps.io/haiti-2016-cholera/>

<sup>4</sup> Hueriga H, Van Cutsem G, Ben Farhat J, et al. Who Needs to Be Targeted for HIV Testing and Treatment in KwaZulu-Natal? Results from a Population-Based Survey. *Journal of Acquired Immune Deficiency Syndromes* (1999). 2016;73(4):411-418. doi:10.1097/QAI.0000000000001081.

<sup>5</sup> Title of the presentation: Cross-sectionally estimated age-specific HIV incidence among young women in a rural district of KwaZulu-Natal, South Africa.

<sup>6</sup> Comparison of Nevirapine and Efavirenz for the Treatment of HIV-TB Co-infected Patients.

<sup>7</sup> UNITAID project.

<sup>8</sup> Title of the presentation: Association between NNRTI exposure, virological suppression and emergence of resistance in HIV-infected patients on tuberculosis treatment: a substudy from the CARINEMO- ANRS12146 trial.

<sup>9</sup> National Institute of Communicable Disease, in Johannesburg and the University of Cape Town.

<sup>10</sup> Grandesso F, Nabasumba C, Nyehangane D, et al. Performance and time to become negative after treatment of three malaria rapid diagnostic tests in low and high malaria transmission settings. *Malaria Journal*. 2016;15:496. doi:10.1186/s12936-016-1529-6.

<sup>11</sup> Malaria Research and Training Centre, University of Bamako, Mali.

<sup>12</sup> Artesunate-amodiaquine, dihydroartemisinin-piperaquine and artemether-lumefantrine combination therapies.

<sup>13</sup> In collaboration with the Malaria Research and Training Centre in Bamako, Mali, and the Epicentre Research Centre in Maradi, Niger.

<sup>14</sup> American Society of Tropical Medicine and Hygiene.

<sup>15</sup> Denoeud-Ndam L, Dicko A, Baudin E, et al. Efficacy of artemether-lumefantrine in relation to drug exposure in children with and without severe acute malnutrition: an open comparative intervention study in Mali and Niger. *BMC Medicine*. 2016;14:167. doi:10.1186/s12916-016-0716-1.



ti/poly) Drug-Resistant Tuberculosis (DRTB), retrospective cohort analyses could provide important information on how to improve the management of these patients. In 2016, Epicentre finalised a multi-centric analysis on several cohorts of MSF patients with DRTB (i.e. DRTB-HIV co-infected patients; Isoniazid mono-resistant patients; multi-drug resistant patients; and DRTB children). Publications are planned for 2017.

### 2.2.6. Nutrition

In 2016, MSF-OCB requested Epicentre to support a research project conducted in collaboration with Ghent University and the Institute of Tropical Medicine (Belgium) on Kwashiorkor. The study aims to use omics-based technologies to improve the understanding of the pathogenic pathways underlying Kwashiorkor that remain currently largely unexplained. The development of the protocol started in 2016 and has made good progress. Field implementation is planned for mid-2017.

### 2.2.7. Niger Research Centre

In 2016, MSF-OCB, through MSF-Norway, continued to support the Epicentre Research Centre based in the Maradi Region in Niger. Several studies underway in 2016 included (i) a descriptive study evaluating the risk of healthcare-associated infections in the inpatient nutritional treatment centre of Madarounfa; (ii) an operational study investigating the impact of withholding routine administration of amoxicillin during ambulatory treatment of children 6-59 months with uncomplicated severe acute malnutrition and (iii) the phase III RCT on the use of a new heat-stable rotavirus vaccine (ROSE study).

### 2.3. TRAINING

In the course of 2016, Epicentre conducted two Populations in Precarious Situations (PSP) courses and two Responding to Epidemics (REPEPI) courses. These were attended by staff from all MSF sections including MSF-OCB. The content and general

structure of the PSP was greatly revised to align with the realities in the field. In addition, Epicentre supported the preparation of a one-week course on "Responding to emergencies and epidemics" led by MSF-OCB, for the regional MSF staff in Afghanistan.

### 2.4. MISCELLANEOUS

Members of Epicentre were involved in presenting and participating at internal (including working groups) and international meetings on the different themes discussed in sections 2.1 and 2.2.

The FUCHIA helpdesk continued to provide regular technical support to all projects where a FUCHIA monitoring system was implemented. In 2016, one intersectional FUCHIA training session was conducted in Bangui (CAR) and three of the ten trainees were staff of MSF-OCB (a medical doctor, assistant medical coordinator and data clerk).

## 3. LOOKING BACK AND AHEAD

# LESSONS LEARNED IN 2016

- The collaboration between MSF-OCB and Epicentre was harmonious and fruitful.
- The second epidemiologist position was re-opened in Brussels to specifically focus on epidemiological activities of the emergency pool.
- A second Epicentre epidemiologist joined the Southern African Medical Unit (SAMU) to support the implementation of HIV population surveys in the region.

## PROSPECTS FOR 2017

- The collaboration between MSF-OCB and Epicentre promises a motivating research agenda for 2017, including the projects mentioned above (e.g. on the rVSV, the Kwashiorkor) but also additional challenging studies such as:
  - A resistance study aimed at measuring the proportion of patients with ART resistance among ART-experienced adults hospitalized with advanced HIV disease in Kinshasa;
  - AnHIV resistance study in Tete (Mozambique) which will measure ART resistance before ART initiation and at least 6 months after initiation of ART. The study will also explore the underlying causes of the abnormally high level of virological failures found in these regions;
  - A study in Nsanje (Malawi) to estimate HIV prevalence, the cascade of care and health-seeking behaviours among female sex workers;
  - A population-based survey in Meerut region (India) to assess HCV prevalence and identify factors associated with HCV infection; and
  - A study on the LAM<sup>16</sup> test for tuberculosis diagnosis in Kinshasa.
- Like in the previous years, Epicentre will continue to ensure the dissemination of recent study results and to discuss new research ideas with the MSF-OCB Medical and Operations Departments
- Epicentre will also continue to work on improving its interaction, communication and collaboration with MSF-OCB partners both in the field and at headquarters.

<sup>16</sup> Test based on the detection of mycobacterial lipoarabinomannan.

# EVALUATION UNIT

## 1. OVERVIEW

The Stockholm Evaluation Unit (SEU) continued to conduct evaluations, reviews and other exercises aimed at Institutional learning and accountability. Over the course of 2016, twenty-one dossiers were followed and sixteen reports were completed. More than half of these were requested by Operational Centre Brussels (OCB).

## 2. PROGRAMME ACTIVITIES

Four of the 16 reports completed in 2016 were with international or intersectional focus and one was conducted on behalf of Operational Centre Amsterdam (OCA). The remaining dossiers were conducted within OCB, with two evaluations for the support departments (Supply and Human Resources) and the remaining eight for OCB operations. Among completed reports the Unit finalised two evaluations of Human Immunodeficiency Virus projects in Guinea and Mozambique initiated in 2015 which are part of the donor agreement.

Two evaluations looked back at MSF-OCB experiences with project closures in Biken-gue and Gorgiel, while the one conducted in Afghanistan focused on the 'lead section' set up and provided recommendations for the future.

The Stop Stock Out evaluation in South Africa and the evaluation of the Victims of Torture projects focused on new programmatic areas for Médecins Sans Frontières (MSF). Whereas both evaluations established that MSF is very successful in adapting to new

challenges, however specific technical expertise needs to be strengthened.

Alongside the evaluations, the Unit continued to provide support for reviews, capitalisations and retrospects. Additionally, the Unit also started joining Comité de Projet (COPROs) and proactively sharing evaluations and findings that are relevant to the project design phase.

## 3. INNOVATIONS AND COLLABORATIONS

The evaluation website ([www.evaluation.msf.org](http://www.evaluation.msf.org)) launched the learning portal which allows users to access evaluation content by thematic areas. The Unit also made evaluations and other relevant documents available on the Oops platform.

The first real-time evaluation took place in Niger and captured valuable lessons learned during the intersectional response to the Meningitis outbreak. The evaluation was well-received and has been used by the Vaccination Working Group on several occasions.

Innovations in evaluation continue through initiatives such as the "Tete Retrospect", a

facilitated After Action Review following the burns' intervention after an explosion in Tete, Mozambique. The Unit is increasing its focus on diversifying methodological approaches and tailoring the evaluation process to better meet the needs of the organisation.

## 4. HUMAN RESOURCES AND TRAINING

- The team was strengthened during 2016 with a Medical Evaluation referent based in Geneva and temporary administrative support for the Evaluation Day.
- The SEU continued to provide training at the annual MSF Evaluation Course, which is jointly organised by the Evaluation Units in Stockholm and Vienna.
- In the spirit of collaboration and efficiency, the Manager of the Stockholm Unit took up the position of Intersectional Focal Point for evaluations.
- Trainings within the Unit enabled team members to continue improving their project management skills.

## 5. LOOKING BACK AND AHEAD

# LESSONS LEARNED IN 2016

- Real time evaluation, such as the one in Niger, offers a valuable opportunity for learning and accountability, not only because it lends itself to a 'light' process, but because findings can be more quickly incorporated into decision-making.
- There is a need to adapt the evaluation questions to ensure that the evaluation response is appropriate. While a full evaluation approach may sometimes be required, there are many streamlined approaches such as retrospects, webinars, workshops, that can ensure an added value.
- With increasing volume of activities, we need to focus on the core activity and the social mission. Therefore, the Unit needs to work hard to ensure that most the evaluation work is directed towards field projects and not support areas.
- There were no evaluations of emergency projects during 2016 and yet these projects can be highly dynamic and innovative, therefore opportunity for learning was missed.

# PROSPECTS FOR 2017

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- Development of an Evaluation Framework for MSF-OCB will be initiated. The framework will establish a baseline in terms of methodology and approach to future evaluation work.
- Strengthen the capacity of the Unit to respond to the continued increasing demand for evaluations while safeguarding the quality of the work.
- 'Real-time' (developmental) evaluation approaches will continue to be tested to provide more timely feedback and input to operational decision-making.
- Strengthen the relationship with technical departments, specifically with the Medical Department.
- Initiate development of a more appropriate methodological framework that stretches beyond the Development Assistance Committee (DAC) criteria, especially regarding evaluations of emergency interventions.



# HEALTH INFORMATICS

## 1. OVERVIEW

Médecins Sans Frontières Operational Centre Brussels (MSF-OCB) ensures the monitoring and reporting of medical programme data using a set of tools that are mainly designed in-house or developed by Epicentre.

In 2016, the use of the Medical Information Network for Operational Support (MINOS)<sup>1</sup> continued to grow, ensuring more standardized data management. An Electronic Medical Records (EMR) project, with a focus on hospital care, was also launched.

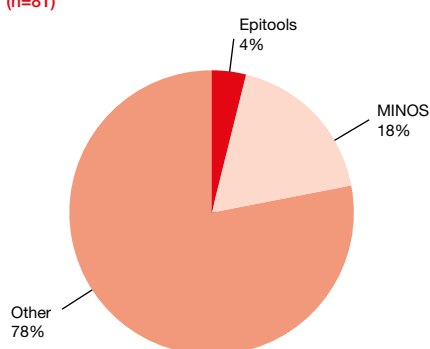
Finally, the creation of the eHealth Unit, which consolidates various medical Information & Technology-based services, marked another milestone in the history of the MSF-OCB medical department.

## 2. PROGRAMME ACTIVITIES

### 2.1. PROGRESS ON DATA TOOLS

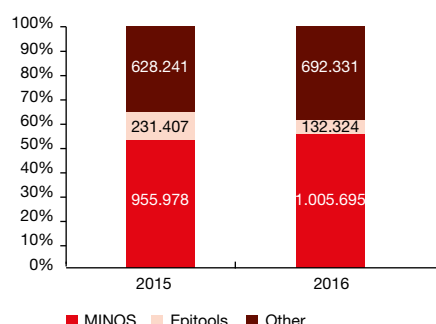
OCB uses three main medical data collection tools for standardised monitoring and reporting of medical programme data: i) Epicentre tools (Epitools) for Out-Patient and In-Patient Departments and gynaecology/obstetrics services (OPD/IPD/Gyn-Obs tools); ii) MINOS; and iii) a number of Excel and EpiData-based tools for collecting patient-level non-aggregated data. The distribution of data tools in use throughout the year is provided in Figure 1. Out of 81 projects, 15 (18%) used MINOS and 3 (4%) used Epitools.

**Figure 1: Main data tools per OCB project, 2016 (n=81)**



In 2016, we aimed to promote more consistent, usable and standardized tools within our projects, as well as to make information available in a central repository, beyond the laptop from where data is collected. In 2015, 955,978 general OPD consultations (excluding antenatal and postnatal care, family planning and ambulatory therapeutic feeding centre consultations) were reported through

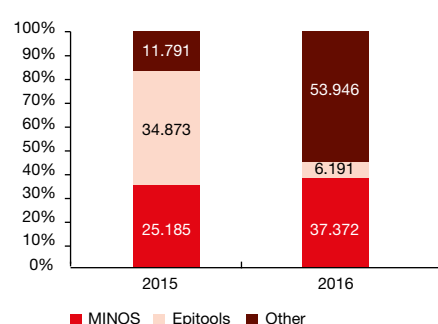
**Figure 2: OCB data reporting tools for OPD consultations, 2015 (n=1,815,626) and 2016 (n=1,830,350)**



MINOS; in 2016 this figure had gone up to 1,005,695 (Figure 2). The best progress is observed regarding general IPD admissions: IPD admissions (excluding maternity and intensive therapeutic feeding centre admissions) reported through MINOS increased from 35% (25,185) in 2015 to 38% (37,372) in 2016 (Figure 3). This effect is less noticeable for IPD admissions as 30% (15,985 out of 53,946 admissions excluding maternity and intensive therapeutic feeding centre admissions) were reported in a new and atypical project (Qunaya hospital, Syria, Turkey mission), which does not use Epitools nor MINOS. The wider use of MINOS increased the availability and reliability of information collected: MINOS avoids multiple and inconsistent versions of Excel sheets, is able to collect data with no internet connection, and its architecture allows a centralized repository of data. It furthermore ensures consistency of indicators between projects and over time.

For better facilitation of longitudinal follow-up, the Monitoring and Surveillance Tools

**Figure 3: OCB data reporting tools for IPD admissions, 2015 (n=71,849) and 2016 (n=94,689)**



(MAST) team initiated a project to increase the monitoring capabilities of MINOS for longitudinal data. It will allow the design and use of time-bound indicators for programmes such as Non-Communicable Diseases (NCD), mental health, sexual and reproductive health care. The MAST team supported the implementation of a NCD programme monitoring tool in Lebanon using DHIS2 – an open source software platform for reporting, analysis and dissemination of data for all health programmes –, to follow a cohort of NCD patients. The transfer of data collection for the Lebanese cohort to the new system was almost complete at the end of the year, with a working infrastructure of DHIS2 servers on-site. The analytical functionalities of the pilot will be set in early 2017.

## 3. CREATION OF THE EHEALTH UNIT

The year 2016 also marked an important milestone with the creation of the eHealth Unit, which consolidates several medical Information & Technology-based services.

<sup>1</sup> MINOS is an information system, designed and developed in-house, for the collection, storage, transmission, analysis, and reporting of medical service data.

This transversal Unit gathers profiles to bridge between the Information and Communication Technologies (ICT) world and the Medical Department, and is run as a strong operational entity. It gathers together pre-existing initiatives (MAST team, EMR project, Geographic Information System GIS, mobile health, data analytics) with one common vision and governance on medical data man-

agement and digitalization. This grouping has led to the creation of a dedicated GIS position, an EMR Project Manager and an eHealth Team Leader position. The unit also recruited a dedicated eHealth Epidemiologist starting early 2017.

The philosophy of the Unit is to facilitate medical care and management of health services by providing efficient digital solutions,

which support and inspire field health workers towards more user-friendly data collection, effective analysis and operational decision making. Its mission is to: facilitate the operational decision making process, reduce the workload of field health workers, provide digital support to our clinical staff, and contribute to improved digital maturity of OCB.

#### 4. LOOKING BACK AND AHEAD

## LESSONS LEARNED IN 2016

- One of the initial expectations of the EMR project was to be able to fully digitalize the patient file. In fact, field assessments in hospital projects demonstrated that its key impact is to improve the management of patient flow by providing an electronic overview system which replaces paper registers and reduces duplication of paper-based information between wards and departments.
- The field remains the most important determinant of health Information & Technology needs. User feedback is a distinct process from collecting the requirements of technical referents, and although both are mandatory, user involvement is recognised worldwide as a key factor in the success of Information & Technology projects.
- The variety of data sets, tools and indicators currently present calls into question our ability to harmonize our surveillance approach and the monitoring of our medical activities. The definition of the structure of the medical data is a critical challenge and requires a clear governance to be set. The importance accorded to this ongoing problem has been raised and a dedicated epidemiologist will work together with the medical referents and the cells on creating a consistent set of indicators and documented terminology, so we can better support our field colleagues with adequate clinical monitoring, evaluation and surveillance application software.

## PROSPECTS FOR 2017

### Major upgrade of MINOS

- MINOS is currently based on in-house developed software. To better respond to the evolving needs, we decided to migrate MINOS from this legacy platform to a more robust solution called DHIS2. In addition to its current capacity to process aggregated indicators, DHIS2 will allow us to broaden the use of MINOS to more precise sets of data at individual level as well as longitudinal indicators.
- The aim in 2017 will be to increase both the use of the core MINOS package as well as of extended modules, with the capacity of managing longitudinal programmes and line lists.

### Clinical support tools & Electronic Medical Records

- In 2016, OCB initiated the Electronic Medical Records project. This initiative aims to provide a digital solution to improve patient and health services management at the point of care, with a strong focus on hospital management and on supporting the management of patient flow. After some programmatic difficulties, the initial choice of pilots has been reshuffled towards inpatient management in the HIV project in Kinshasa (Democratic Republic of Congo) in the first half of 2017, and the Tabarre (Haiti) trauma centre at the end of 2017. We will seek ways of introducing innovative digital solutions which support clinical staff to simplify medical data management at the point of care.

### Joint medical data governance

- In 2016, the medical representatives in the Cells defined a common road map for medical data management, which we are using as the basis for prioritizing the eHealth Unit's investments. The major outstanding priority which remains to be tackled is the need for improved data management tools in mobile clinics, and this will receive a special focus in 2017.
- The eHealth Unit will integrate medical expertise into its daily work by designing a joint medical data governance together with the Medical Department and its Units (LuxOR, SAMU) and by adding medical profiles to the team (an epidemiologist and an MD clinician).

### Facilitating operational decisions

- The eHealth Unit will also maintain its proximity to the field in order to support digital solutions to operational needs guided by medical requirements. We will improve our field network through i) deploying additional eHealth and GIS officers as part of the field teams, ii) creating a help desk for our field colleagues, and iii) providing digital tools to maximise the effectiveness of assessments, surveys and other processes, with a focus on the data collection and the analytical part of the decision-making processes.

# HEALTH PROMOTION AND SOCIO-ANTHROPOLOGY

In 2016, there was an increase in the number of projects dedicated to migrants where Health Promotion (HP) had an important role to play together with social work. Over the past few years, the humanitarian landscape and Médecins Sans Frontières' (MSF) operational choices (such as the migrant projects) had an impact on the HP component. As a result, we have gradually shifted from a vertical approach to a much more holistic approach that took into consideration the different determinants of health and factors that influenced MSF-Operational Centre Brussels (OCB) operations.

Today, HP continues to invest in health education, adapting health services to the context and is increasingly getting involved in community engagement and creating supportive environments through linkage with social work. This evolution and vision is also being carried out by the other sections of MSF. The current HP policy version 2009 is obsolete and is therefore under revision. There is also an increased diversification of the support provided to the field through different departments and an enthusiasm to create platforms for collaboration.

## 2. PROGRAMME ACTIVITIES

### 2.1. HEALTH PROMOTION GENERAL OVERVIEW

In 2016, HP activities were conducted in 45 projects across 26 missions (excluding vertical HIV/TB projects, which are reported elsewhere – cf. HIV/TB/Hepatitis C section). These projects included 9 migration projects, (Table 1, Annex), 7 emergency interventions projects, (Table 2, Annex) and 29 regular projects (Table 3, Annex).

### 3. TRAINING AND HUMAN RESOURCES

The following trainings included a HP or socio-anthropology component:

- Water, Hygiene and Sanitation (WASH) in Emergencies: module "Health promotion in WASH and Emergency".
- Sexual and Reproductive Health training: module "Health promotion and Reproductive health".
- First Line Medical Training (FLMT): Integrated approach for community based health care.
- Health Promotion training in Brussels: ten days training open to all sections.

- Network on Humanitarian Action (NOHA) and University College London (UCL) Fall School in International Humanitarian Action: two hour's module on anthropology in humanitarian response.
- Health Promotion Workshop held in Kabul, Afghanistan: 5 day's regional training open to all sections.
- Two workshops on anthropology, health promotion and community engagement in Geneva and Barcelona.

### 4. OPERATIONAL RESEARCH / SOCIO-CULTURAL ASSESSMENTS

In order to generate a better understanding of the socio-cultural issues in the contexts in which OCB works and in order to better support OCB medical activities, several qualitative socio-anthropological studies were conducted either as part of the regular HP activities or as operational research. The studies included:

- Cambodia – Preah Vihear: *"Keep the Force to Keep the Order"*, facing malaria in the Cambodian forest. An ethnographic study, by Pierluigi Taffon.
- Egypt – Maadi: *"To open again, we never think something like that"*, an anthropological assessment of infibulation, health problems and health-seeking behaviour of

Sudanese, Somali and Eritrean refugees in Cairo, Egypt, by Ursula Wagner.

- Afghanistan, Kandahar: *"Patients/caretakers and community's perception of Tuberculosis"*.
- Afghanistan, Khost: *"Tell it to my mother in law"*, Women's sexual and reproductive health, their perception of and access to maternal health care services, by Doris Burtscher.
- Afghanistan, Khost: *"Report on Radio Survey: Listening patterns and behaviours of MSF beneficiaries"*.
- India, Chhattisgarh: *"We treat by God's grace"*, -a report on perceptions of disease and cure along the southern Chhattisgarh border, by Mari Nythun Sørlien.
- Greece, Idomeni Camp, *"Human limits of humanitarian aid, report on perception of MSF"*.

### 5. CONFERENCES

During the 22nd International Union for Health Promotion and Education (IUHPE) World Conference on Health Promotion in Curitiba, Brazil, the "Awareness raising sessions during an Ebola intervention, a thematic analysis of routine data in Conakry, Guinea" was presented.



# LESSONS LEARNED IN 2016

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- There was an increase in the components and key people involved from different geographical places and departments which brought more focus and competencies of social science into MSF and providing a more holistic approach to health.
- To augment these initiatives and efforts it is essential to improve collaboration through regular meetings and sharing platforms in which continued exchange of information and technical know-how is encouraged.

## PROSPECTS FOR 2017

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- To revise the MSF-OCB's Health Promotion Policy to replace the current 2009 HP Policy which is obsolete and does not relate to the reality of the current operation that is moving towards a more holistic vision of health promotion of integrating as much as possible the determinants and factors influencing health.
- Improve the understanding and integration of HP within the other medical activities to enhance its ownership by the medical team.
- Writing of a comprehensive MSF guideline on HP and community engagement to be led by Operational Centre Barcelona with input from all other sections.

# HIV/AIDS, TUBERCULOSIS AND HEPATITIS C

## 1. OVERVIEW

In 2016, Médecins Sans Frontières Operational Centre Brussels' (MSF-OCB) main efforts have been invested in improving programmes outcomes towards the 90-90-90. This work was supported by several community surveys implemented by Epicentre which helped programmes to identify their major programmatic gaps around the third '90'. Dedicated programmes have been developed to reach out to specific population targets like sex workers (SW), men having sex with men (MSM) and prisoners. New innovative ways were added to 'test and treat' programmes such as self-HIV-tests and oral prep to circumcision for HIV prevention. Tuberculosis (TB) activities have specifically focused on drug-resistant tuberculosis (DRTB) and introduction of the new second line TB drugs like Bedaquiline and Delamanid.

## 2.1. INTRODUCTION

In 2016, OCB kept looking for a specific role and added value ie 'where other actors are not'. For example, managing HIV late presenters at referral level, detecting additional new HIV cases via large scale community-testing campaigns and improving retention-in-care with new community based model of care. Following the latest World Health Organization (WHO) recommendations regarding universal antiretroviral (ART) eligibility, MSF programmes' focus moved towards universal treatment facing difficulties for linkage to care when people are diagnosed at community level, thus compelling us to find new clinically light approaches. Conversely, new clinical approaches and guidelines have been developed on 'HIV advanced disease' (CD4 < 200 or stage III/IV) at very high risk of death, even more so now that ART naive patients are slowly being replaced by ART experienced patients, either on treatment failure or re-admissions after treatment interruption.

On-going neglect in low coverage settings, particularly conflict and post-conflict settings means that access to HIV/TB care in these countries remains resoundingly inadequate. A Western and Central Africa acceleration plan has been launched following the MSF report 'le Prix de l'oubli' issued in June 2016 together with WHO/UNAIDS/PEPFAR.

### 2.1.1. HIV

During 2016, MSF-OCB remained with a similar number of large vertical projects keeping a specific complementary role, while mostly investing in more integrated, emergency and unstable contexts.

At the end of 2016, OCB stabilised the number of HIV care and treatment in 19 projects across 10 countries. Of these, 15 were vertical HIV/TB projects in the following 8 countries, Mumbai (India), Conakry (Guinea), Kinshasa (DRC), Changara, Beira, Tete (Mozambique), Gutu, Mutare, Chikomba, Nyanga (Zimbabwe), Nsanje, prison project (Malawi), Khayelitsha, KwaZulu-Natal (South Africa) and Dnipropetrovsk (Ukraine). Also in 2016, MSF decided to disengage from Annaba, Tamanrasset (Algeria) and Kibera (Kenya). In four remaining projects, HIV/TB activities were integrated with other medical activities such as primary care, hospital care and chronic disease management as well as sexual and reproductive health (SRH) in Masisi (DRC), Rustenburg (South Africa) and Bangui and Bangassou (CAR). Four vertical projects in Mumbai, Kinshasa, Conakry and Dnipropetrovsk still remain primarily MSF-supported in terms of human resources and drug supply.

### 2.1.2. TB

In 2016, TB activities were run in 13 vertical TB/DRTB and HIV/TB projects in India, Guinea, Ukraine, South Africa (SA), Malawi, Zimbabwe, Mozambique, DRC, Kenya and CAR. In addition to the 6 transversal projects in Afghanistan, India, South Sudan, DRC and Mauritania. Among projects with a relevant DRTB component, the project of Mumbai, India, in collaboration with the Ministry of Health (MoH), has expanded activities and started implementation of TB/DRTB care including a new active case finding strategy among the most vulnerable population living in a slum area. Important achievements have

been reached in terms of introduction of new drugs (Bedaquiline and Delamanid) for DRTB patients with limited therapeutic options both in India and South Africa (SA) and the introduction of a new diagnostic test (TB LAM) for the detection of TB in HIV patients with advanced disease.

### 2.1.3. HEPATITIS C

Hepatitis C (HCV) testing and treatment activities were implemented in 3 OCB projects: Karachi (Pakistan), Nairobi (Kenya) and Meerut (Uttar Pradesh, India). OCB mission in SA in collaboration with The University of Cape Town, also supports provision of HCV treatment to a limited number of genotype 5 (GT5) patients.

The recent introduction of direct acting antiviral agents (DAA) which can be given in a short course of 3 to 6 months has up to 95% treatment success rates called sustained virologic response at 12 weeks after treatment completion (SVR12). Advanced medical diagnostics such as the introduction of HCV virology into GenXpert platform, simplifies treatment delivery model and implementation of HCV high burden settings closer to the patient and on a larger scale.

In the vertical HCV project in Karachi, Pakistan, since its onset in 2015, 2,500 patients were enrolled and HCV treatment was initiated in 630 patients. By the end of 2016, 306 patients had completed treatment and the outcome was evaluated in 205 patients. The HCV treatment success rate was 81% which is comparable to the best international practices. Since October 2016, a more advanced HCV treatment combination has been intro-

duced to the project which will allow further shortening of the treatment, simplification of follow up and eventually better treatment outcomes.

HCV prevalence among PLHIV in the OCB supported project in Nairobi, Kenya, is very low (0.04%; 4,768 screened since 2015; 2 HIV/HCV; 2 initiated on treatment). However, a relatively higher HCV prevalence is found in people who inject drugs (PWID). MSF-OCB therefore decided to collaborate with Médecins du Monde (MdM) in providing HCV care for people who inject drugs in Nairobi. In 2016, OCB also initiated treatment for 12 HIV/HCV co-infected patients.

Furthermore, in 2016, OCB has started to assess the needs related to HCV in the district of Meerut in Uttar Pradesh state, India. There is a high HCV burden supposedly resulting from health care-related HCV transmission. MSF decided to implement a two-component project consisting of simplified HCV diagnostic and treatment at district hospital level and population-based intervention supported by a population survey (2017) in part of the district with the highest prevalence.

## 2.2. TESTING FOR HIV AND TB

### 2.2.1 HIV TESTING

Increasing the HIV awareness rate (first 90) was the key objective in 2016. KwaZulu-Natal has been championing large scale rural community-testing strategies for several years while in other places (Nsanje, Gutu) it has been left to other implementers, hence not reported here. A record figure of 203,527 HIV tests (Figure 1) was mostly due to several projects developing initiatives to support outreach testing and target specific groups complementary to a renewed focus on facility-based testing in Eshowe in SA, Corridor project in Mozambique and Conakry which have been championing this strategy.

In urban projects, strategies of targeting key populations were implemented. Kinshasa looked for key populations without great success contrary to Conakry where it was related to the post-Ebola testing scale up.

Innovative testing strategies, including oral self-testing, remain the exception. With the commercialisation of new self-test devices, including invasive tests, we expect an increase in 2017. Opening the clinics after hours' strategy, with night testing for men in Zimbabwe and Khayelitsha, along with peer-led testing and re-testing among SW and

truck drivers in Mozambique have also been included.

### 2.2.2. TB CASE FINDING AND ENROLMENT

During the course of 2016, TB case-finding data were reported from 17 OCB projects. A total of 4,877 TB patients were detected and started on treatment and 4,113 out of these were DSTB (Figure 2) while 764 were DRTB cases. The overall TB case detection is slightly lower compared to the previous year (5,267 patients were detected in 2015). However, the DRTB case detection has increased which can be explained by the reduced number of transversal projects reporting TB data.

Improvements in early TB detection thereby allowing rapid initiation of TB treatment has been possible through the ongoing scale up of GenXpert, as well as through the introduction of new diagnostic algorithms for detection of TB in advanced HIV patients. A new lab test (TB LAM) was used in 3 different countries, Guinea, DRC and CAR.

Among new DSTB cases, in projects which reported the standard indicators for TB, the average proportion of confirmed pulmonary TB by smear microscopy and/or by Xpert MTB/RIF was 55%, comparable to the one in 2015, but much higher than the propor-

tion of the previous years before Gene Xpert was rolled out. Paediatric TB detection rate remains low, with only 138 children under 5 years old reported to be started on treatment in 2016, in projects which provided data. Although diagnosis of TB in children is known to be challenging, more efforts are needed to increase access to TB care in this particularly vulnerable population, especially in transversal/nutritional project. An assessment has been done at the end of 2016 in the project of Doro, in South Sudan, and TB activities, with a focus on paediatric TB, are planned for 2017.

## 2.3. PATIENT ENROLMENT

### 2.3.1. PRE-ART ENROLMENT

Since 2016, we have been offering ART immediately after testing (Test & Treat strategy) irrespective of the CD4 count, which is resulting in a slow disappearance of our pre-ART cohorts (Figure 3). Since, not all countries are implementing "test and treat", there are still pre-ART patients.

### 2.3.2. ART initiation

A total of 22,812 adults and children were initiated on ART in 2016 (Figure 4). The decreasing trend of initiation on ART follows the handover of several major projects (Thyolo, Mavalane, Kinshasa, Masina).

Figure 1: HIV testing supported in MSF projects, 2007-2016

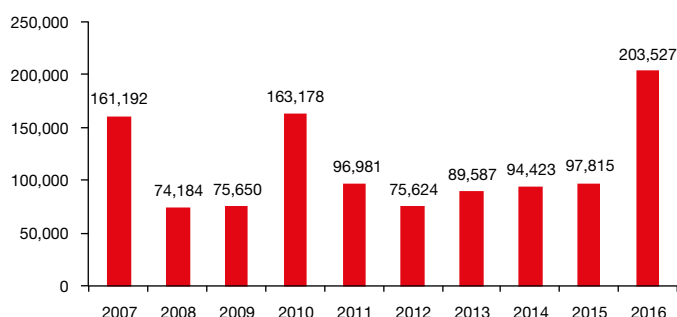
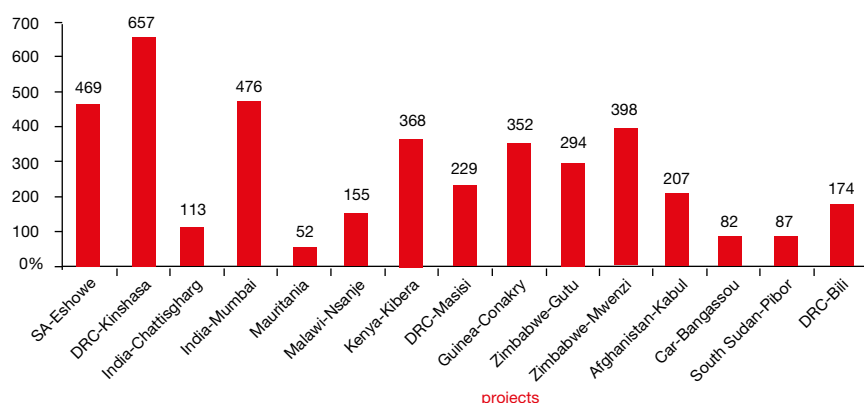
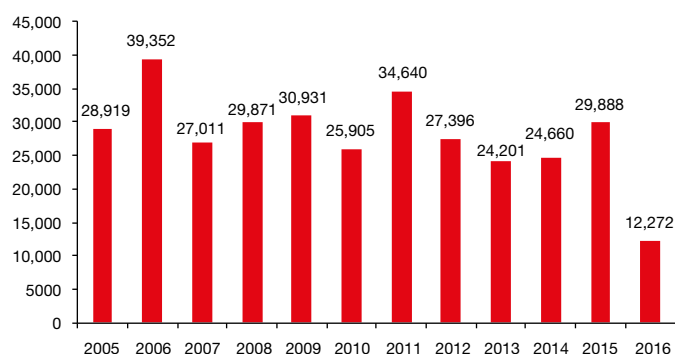


Figure 2: Drug sensitive Tuberculosis case detection and enrolments in OCB projects, 2016

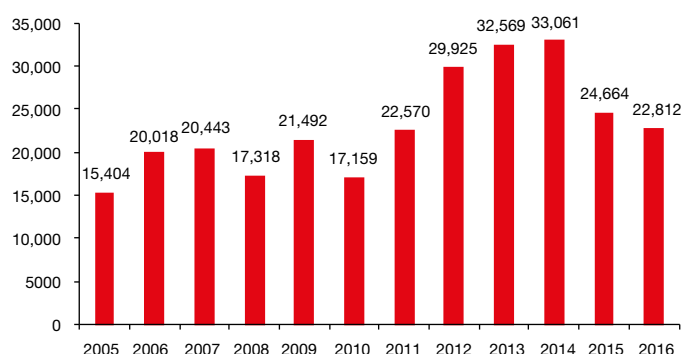




**Figure 3: Number of newly pre-ART registered HIV patients in MSF programmes by year of entry, 2005-2016**



**Figure 4: Total ART initiations (adults and children) in MSF projects, 2005-2016**



### 2.3.2.1 Children initiated on ART

There were 2,048 children initiated on ART which is a small increase from 2015 (Figure 5). This probably follows better implementation of systematic in-patient department (IPD) testing in children hospitalised and improved index testing strategies, testing relatives of identified people living with HIV.

### 2.3.2.2 Cohort on first, second and third line of regimens

Figure 6 shows that the number of patients

on second line ART remains very small (<10 %), illustrating the shortcomings of our Viral Load (VL) strategies, which results into long delays in switching first line therapy to a second line in our projects. Mumbai is a project specifically dedicated to patient on 2nd line and the only one to have more than a couple of patients on 3rd line. Khayelitsha's reported numbers include a very few specialised clinics supported by MSF and does not represent the general cohort.

## 2.4. HIV AND TB OUTCOMES

### 2.4.1. ART OUTCOMES

#### 2.4.1.1 Adult ART outcomes

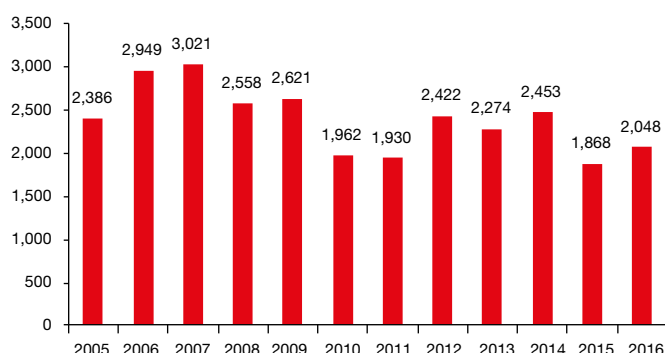
The WHO/UNAIDS target for "retention in care" (RIC) is fixed at 85% of the initial cohort retained on ART at 12 months. For the 11 projects reporting outcomes for patients initiated on ART during 2015, RIC at 12 months showed very different outcomes and the target was not generally achieved except in the relatively small cohort of Mumbai (Figure 7), which implies the difficulties of scaling up while maintaining programme quality. Some major monitoring and evaluation (M&E) challenges to be recognised in measuring this indicator, include out of clinic community based management Clubs, Community ARV Groups (CAGs) and mobile populations while some lost-to-follow up should actually be considered as 'silent transfers'.

Differentiated models of care strategies to improve RIC (CAGs, Clubs, Community Antiretroviral Distribution Points (PODs) initiated by MSF), have increasingly become popular in most National programmes including alternative refill strategies (using community ART groups and adherence clubs and clinic-based 'fast track' systems). Routine VL testing/monitoring, identifying adherent patients has enabled a move towards one annual clinical visit only, allowing clinicians to dedicate more time to patients, with significant medical and/or adherence problems. MSF continued playing a major role in the development of national strategies for VL, counselling scale-up and implementation.

#### 2.4.1.2. Paediatric ART outcomes

Retention in care rates for children remains higher than adults although some projects

**Figure 5: Paediatric ART initiations in 8 MSF projects, 2005-2016**



**Figure 6: Proportion of cohort on first, second and third line in MSF projects, 2016**

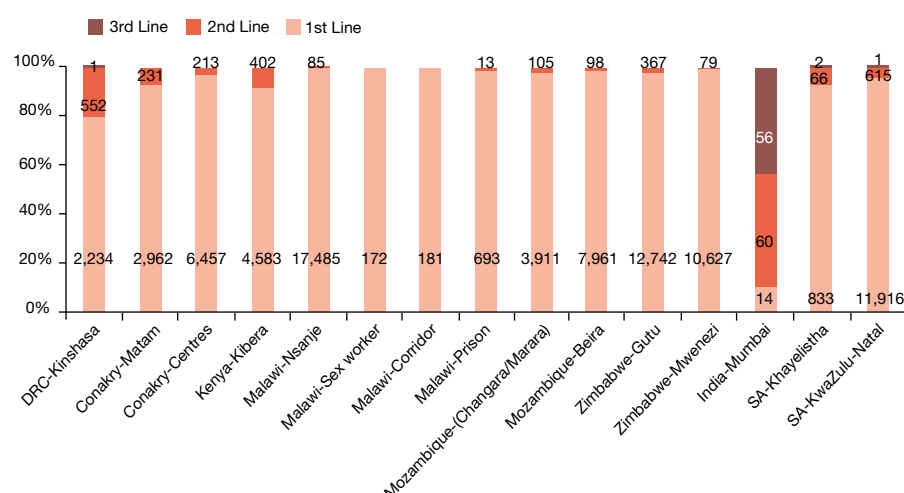


Figure 7: Adult Retention In Care at 12 months, for patients initiated in 2015 in MSF projects

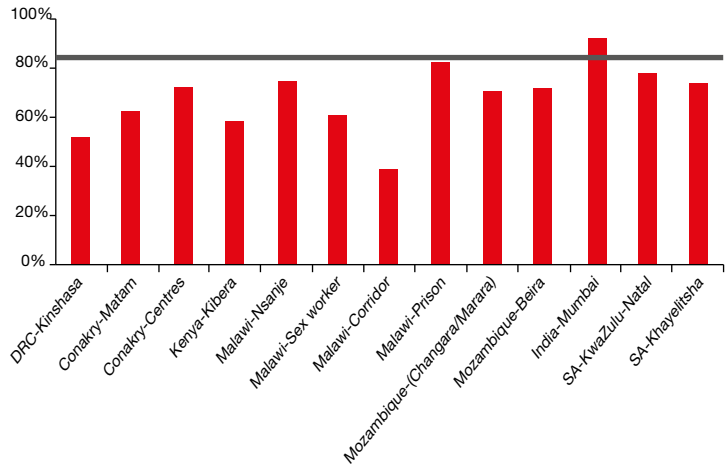


Figure 8: Paediatric Retention In Care at 12 months for patients initiated in 2015 in MSF projects

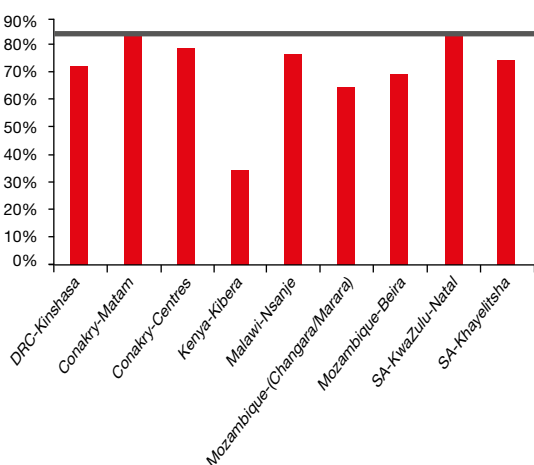
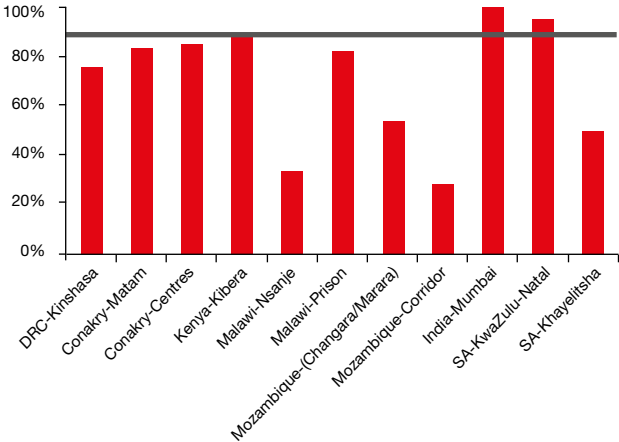


Figure 9: Adult Viral Load Coverage in MSF Projects 2016



show a significant reduced retention rate. The reduced rate in Kibera, is due to project closure while in Changara, Beira and Kinshasa it is probably linked to limited access to care for the quite mobile population, (Figure 8).

#### 2.4.1.3. VL and the VL Cascade

##### Adult Viral load coverage

Data on VL completion rates (number VL done/VL due) are very unequal. Completion rates in some places are below 50% in ma-

jor vertical and long established projects like Nsanje, Khayelitsha and Tete/Beira. On the contrary, projects such as KwaZulu-Natal with a high patient load and Conakry which is resource limited, achieved the 90% target, (Figure 9).

VL completion rates in children are better compared to adults in same setting. Though, Nsanje and Changara completion rates are below all other projects illustrating local access to VL problems (Figure 10).

##### Adult Viral load suppression

Figure 11 shows that the target of VL suppression of 90% was achieved by most projects. However, results in all Mozambican projects show a sharp contrast and therefore demands for investigation for potential existing primary HIV resistance and analysis of the impact of adherence support strategies. Since the Mumbai project in India targets basically 2nd/3rd line treatment, it does not qualify for the 90% target.

Figure 10: Paediatric Viral Load Coverage in MSF Projects, 2016

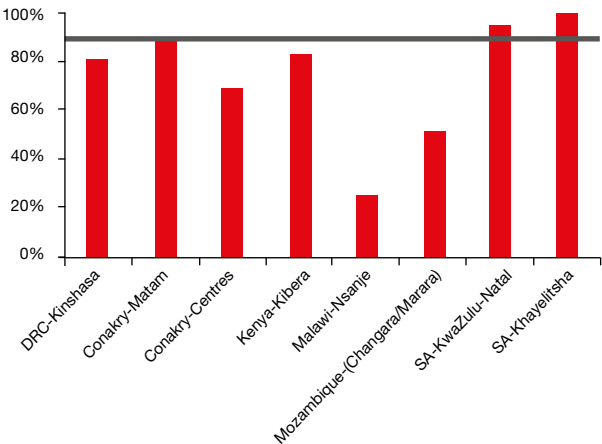
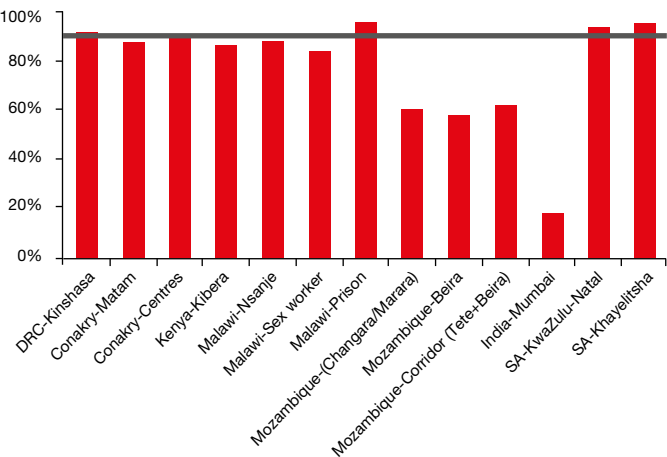
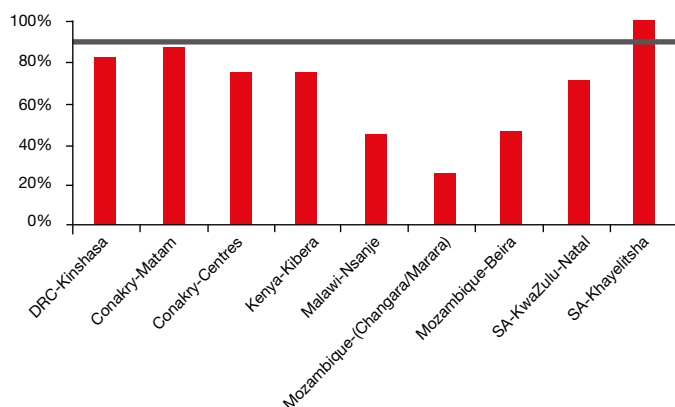


Figure 11: Adult Viral Load Suppression in MSF Projects, 2016



**Figure 12: Paediatric Viral Load Suppression in MSF Projects 2016**



### Paediatric Viral load suppression

Viral load outcomes were generally worse in children compared to adults and vary widely between projects (Figure 12). It is only in Kenya, South Africa and Zimbabwe where children have been initiated on a thermo-stable protease inhibitor (lopinavir/ritonavir) as per WHO guidelines. The other countries are still waiting for a thermo-stable paediatric formulation (pellets). This factor however does not explain all differences since quality of the programme is equally an important determinant.

### 2.4.2. TB OUTCOMES

TB treatment outcomes for 1,810 patients with DSTB were reported from only 7 projects. The average success rate of DSTB treatment was 69, moderately lower than in 2014 (77%), though much higher than 36% in 2013. Overall, the mortality rate which affected mainly patients with HIV increased by 7% compared to 2014. The largest project providing care to TB patients in Kinshasa, DRC reported lower than expected treatment success rates (46%). This can be explained by the severity of disease in patients in this cohort since all patients are co-infected with HIV and are mainly in an advanced stage. The introduction of the urine-based

LAM test for diagnosis of TB in HIV patients, which started in 2016, will likely contribute to the reduction in mortality in this cohort, following a reduction in time between diagnosis and treatment initiation.

Several projects did not report any outcomes because TB patients once diagnosed were referred to the respective National Tuberculosis Programme (NTP) for management without any further MSF support or involvement.

### 2.5. DRUG-RESISTANT TB

In 2016, 764 patients with multidrug-resistant tuberculosis (MDR-TB), were enrolled on DRTB treatment in 7 OCB projects, which represents an increase of DRTB enrolment of 30% compared to the previous year, despite the reduction of enrolments in Ukraine (37 patients).

The largest cohort was represented by Mumbai, where a total of 491 DRTB treatment initiations took place in 2016. Of these, 69 patients with extremely complex resistant profiles were started on treatment at the MSF independent clinic, while the remaining 422 were detected and enrolled at the newly supported by MSF-MoH out-patient department in the administrative unit of MEW in Mumbai. Enrolments in Khayelitsha, SA, remained stable compared to previous years at 208

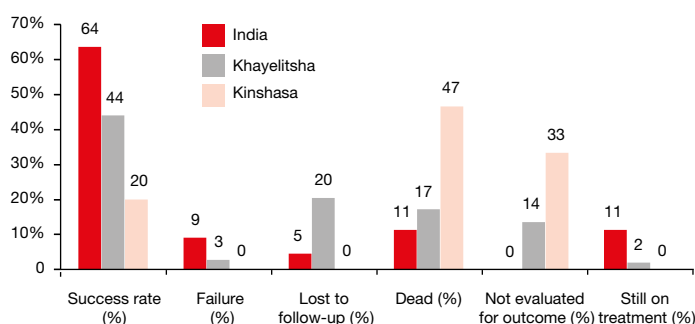
patients. In Kinshasa, scale up of diagnosis and treatment of DRTB took place, with 15 patients presently on treatment.

Outcomes of DRTB treatment lasting two years were reported from Khayelitsha, Mumbai and Kinshasa, (Figure 13). Treatment success rate for the cohorts of Khayelitsha, where co-infection rate with HIV is very high and Mumbai where mainly pre-XDRTB and extensively drug resistant tuberculosis (XDRTB) patients are enrolled was 44% and 64% respectively. This remained the same as the previous year. In Kinshasa, although the cohort was very small, mortality reached almost 50%. As previously discussed, patients enrolled at the Centre Hospitalier Kabinda (CHK) of Kinshasa, are co-infected and often in very advanced stage of HIV disease. Besides, DRTB treatment at CHK cannot be directly provided by the MSF team since it has to be authorised by the MoH which causes further delay in treatment initiation. Treatment success rate for the 2014 cohorts of Ukraine (Donetsk and Dnepropetrovsk) were not available, as the project on Donetsk closed in 2015 due to conflict and also the project of Dnepropetrovsk could not provide data.

#### 2.5.1. New drugs and new regimens

Access to Bedaquiline and Delamanid, the two new drugs approved for use in XDRTB, remains globally challenging. Besides a small number of clinical trials and compassionate use programmes, globally only 469 people received Delamanid in 2016 worldwide. At OCB level, very important achievements have been reached concerning introduction of these two new drugs (Figure 14, page 40) and related advocacy activities. In SA and India, a total of 95 patients received Delamanid as part of their treatment regimen, representing 20% of the global cohort. Scale up of Bedaquiline has also continued in both projects, with 184 patients receiving the drug in Khayelitsha, SA (where the drug is registered) and 13 in Mumbai, India where access remains extremely challenging since it is restricted by national authorities.

**Figure 13: DRTB Outcomes for the 2014 cohort from Mumbai, India, Khayelitsha, SA and Kinshasa, DRC\***



\* Outcomes analysed refer to the 2014 cohorts

For patients with very limited treatment options, MSF teams have also been able to provide treatment with the combination of the 2 new drugs, despite the lack of international recommendations. A total of 28 patients have received the combination of Delamanid and Bedaquiline on compassionate ground, and although this represents the biggest cohort in the world, these small numbers underline once again how more efforts

must be made to quickly scale up access to these life-saving treatments. Early results in terms of both safety and efficacy from MSF cohort are extremely promising and have been presented at the World TB conference in October 2016.

## 2.6. HIV/TB INTEGRATION

Integration of TB and HIV activities has continued throughout the year. One of the most important activities implemented has been the introduction of a new diagnostic test (TB LAM) for detection of TB in patients with advanced HIV. The test has been introduced in 3 different countries; CAR, Guinea and DRC. Data available from the project of Conakry, Guinea show a massive diagnostic yield (Figure 15) of the test among HIV patients with advanced disease (CD4<100).

Another important achievement has been the huge scale up of Isoniazid preventive therapy for TB (ITP) among HIV patients in Gutu (Zimbabwe) where in collaboration with the MoH, 3,164 eligible HIV patients have been started on 6 month of IP demonstrating ITP feasibility in co-infected HIV/TB while generally poorly implemented in other projects.

## 3. MONITORING AND EVALUATION (M&E) AND OPERATIONAL RESEARCH (OR)

Regarding M&E in 2016, partnership with the University of Cape Town has been ongoing. The activities include developing integrated M&E cohort monitoring tools for HIV and TB /MDRTB patients with an updated

Figure 14: Patients started on Delamanid and/or Bedaquiline in MSF projects

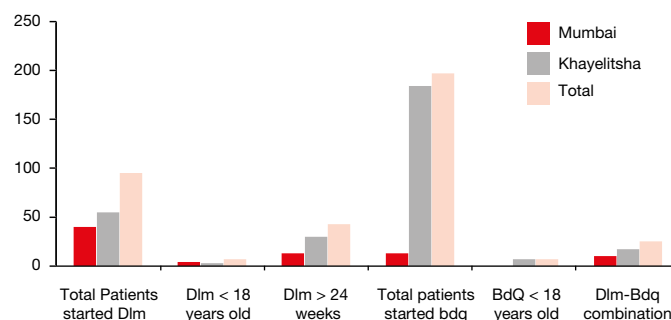
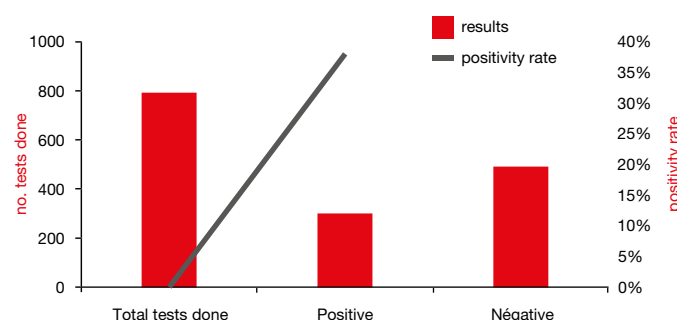


Figure 15: TB LAM results for detection of TB in patients with advanced HIV



version of TIER.Net software (version 1.10). Furthermore, in 2016, a specific M&E data management course for MSF staff working in infectious disease projects was organised in collaboration with University of Cape Town/ Centre for Infectious Disease Epidemiology and Research.

2016 has also seen an exceptional number of other OR activities across all projects, details of which are available in the operational research section. Findings were published

and presented at a number of international conferences assuring a wide visibility of MSF HIV/TB activities and strongly influencing the development of new WHO guidelines.

After decades of lack of research addressing the problem of finding better treatments for DRTB, 2016 has brought several clinical trials in the pipeline. Khayelitsha has joined one of the research initiatives- the end TB clinical trial, led by MSF intersectionally and it will become one of the sites for enrollment in 2017.

# 4. CHALLENGES FOR 2017

MSF faces critical challenges of balancing HIV/TB priorities in the coming years:

- ensuring improved access to minimal quality HIV/TB care in low coverage settings and emergency contexts while aiming for universal coverage and incidence reduction, articulated in the "90-90-90" strategy.
- keeping a decentralised public health approach with maximising the use of differentiated community care models. While at the same time, developing special management tools and guidelines for 'HIV advanced disease', earlier detection of treatment failures and specific approaches for re-initiation after loss to follow up.

Such delicate operational balances has forced MSF to position its role more clearly amongst a range of international actors in an international context of reducing financial commitments and a reversal of HIV exceptionalism.

Additional areas of focus in 2017 will include:

- Pre-exposure prophylaxis (PREP) in specific groups with extremely high HIV incidence
- HIV co-infection with TB including DRTB with simplified DRTB regimens and access to new drugs
- Co-morbidities including new regimens for Hepatitis C, hepatitis B, Human Papilloma Virus and early detection and management of non-communicable diseases in an ageing cohort.



# INFECTION PREVENTION AND CONTROL

## 1. INTRODUCTION

People should not get sick while seeking health care. However globally, millions of people are affected every year by Healthcare Associated Infections (HAI). A HAI is an infection that is acquired by a patient while receiving care in a hospital or other health facility and that was not present or incubating on admission.<sup>1</sup>

The World Health Organization (WHO) describes Infection Prevention and Control (IPC) as a practical, evidence-based approach preventing patients and health workers from being harmed by HAI, which are often avoidable. IPC is crucial to ensure patient safety and quality of care and it is relevant to every health worker and patient, at every health care interaction.<sup>1</sup>

In an era where Antimicrobial Resistance (AMR) is becoming a global threat and considering that hospitals are hotbeds for AMR, IPC is even more crucial. While the severity of hospitalized patients is increasing and the use of invasive devices is augmenting, there is a higher risk for HAIs, often caused by AMR pathogens. Hospitals act as well as referral sites for difficult-to-treat infections. As such, the need to avoid cross-transmission within and between health care facilities is paramount.

## 2. PROGRAMME ACTIVITIES

### 2.1 AMR AND IPC

In response to the rapidly growing problem of antibiotic resistance, and in order to coordinate MSF's common commitment to this dossier, the Medical Operations platform (composed of the Medical and Operational Directors of the Operational Centres) decided in 2015 to create a specific task-force on AMR. This task-force received a mandate to develop a detailed roadmap to improve the capacity to prevent, detect and manage AMR in MSF projects. In 2016, a finalised roadmap was presented and approved, to be implemented over a period of four years. Three main topics were identified as priorities: i) antibiotic stewardship and rational antibiotic prescription; ii) diagnostic tools and AMR surveillance; iii) IPC.

### 2.2 DIRECT SUPPORT TO THE FIELD

In 2016, the IPC Mobile Implementation Officer (MIO) conducted visits to projects in Guinea, Mauritania, Haiti, Kenya, Afghanistan, and the Central African Republic (CAR). Main objectives of the visits were: i) situation analysis for IPC implementation; ii) design an action plan accordingly; iii) initiate implementation of activities with the local teams. Pro-

jects in Sierra Leone, Haiti and Turkey (support for medical activities in Syria), received field visits from the IPC referent in order to provide assistance on specific challenges e.g. conducting assessments of public hospitals in post-ebola region, or tailoring IPC strategies to complex contexts such as the Syria.

### 2.3 STRENGTHENING CORE COMPONENTS OF IPC

The WHO Guidelines on Core Components of IPC describe the pillars of effective IPC.<sup>2</sup>

#### 2.3.1 Human resources for IPC

In the contexts of Médecins Sans Frontières (MSF) operations there is often a deficiency of trained IPC personnel. Therefore MSF is developing a strategy for training of IPC Officers. The IPC team of MSF Operational Centre Brussels (OCB) requested from all hospitals to create an IPC Officer position (national or expatriate staff). As of 2016 recruitment of qualified international IPC staff was initiated. In June 2016, OCB had an IPC Officer in 11 out of 15 hospitals.

#### 2.3.2 IPC training

In 2016, IPC training was conducted for a range of MSF profiles: surgeons, anaesthe-

siologists and emergency doctors, biomedical equipment managers, and other project medical staff. On-the-job training was also provided during the visit of the IPC MIO. Specialised training was designed and held for medical staff working in Syria on ensuring IPC in the context of a collapsed health system.

#### 2.3.3 Built environment, materials, equipment

Patient care activities should be undertaken in a clean and hygienic environment that facilitates practices related to HAI prevention and control. The IPC team contributed to development of standard construction plans for prefabricated structures (e.g. Gaptek), for the purpose of renovating and/or constructing health structures in the field (e.g. Doro, South Sudan) and to design a mobile surgery unit (Mobile Unit Surgery Trailer). The involvement of IPC expertise in the design of health structures is important to create an environment that enhances good IPC behaviour and practices. However, a survey conducted by the IPC referent, showed that OCB hospital environments are still compromised. For example, in June 2016 half of the hospitals had less than one meter of space in between beds.

<sup>1</sup> WHO/HIS/SDS/2016.10. Health care without avoidable infections. The critical role of infection prevention and control. <http://apps.who.int/iris/bitstream/10665/246235/1/WHO-HIS-SDS-2016.10-eng.pdf>

<sup>2</sup> Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level <http://apps.who.int/iris/bitstream/10665/251730/1/9789241549929-eng.pdf?ua=1>

Under the lead of the biomedical equipment referent and the Swedish Innovation Unit, OCB developed a new type of autoclave that improves the quality of sterilization while decreasing the cycle time and the water consumption.

Several new items related to IPC have been introduced in the MSF catalogue, such as a control set with ultraviolet light for inspecting the cleaning of surfaces, hand hygiene control box to check hand disinfection of health staff, and sterile dressings for the intravenous catheters.

Hand hygiene is considered the cornerstone of IPC and the use of alcohol-based hand rub is the preferred method of hand hygiene; that is superior to soap-and-water washing when hands are not visibly soiled.<sup>3</sup> Alcohol

based hand-rub should be available at point-of-care. Over the last years we can see a steep increase in consumption of alcohol based hand-rub in OCB projects.

### 2.3.4 Monitoring/audit of IPC practices and feedback

All OCB hospitals should perform monitoring of hand hygiene compliance but only 9 out of 15 did so in 2016. Challenges relate to the lack of qualified IPC Officers and overall IPC knowledge and practices among general health staff.

### 2.3.5 HAI surveillance

The surveillance of HAI in our hospitals remains weak. Up to now, we did not accurately generate data on the incidence of HAI,

including surgical site infections and catheter related bloodstream infections which are two most common HAI. Taking into account the volume of primary surgical interventions (13,446) in 2016, surgical referents expressed the need to focus on the follow-up of the quality of care through a surgical site infection database. As reported by the paediatric referents, sepsis represents 11% of the under-five in-patient mortality and the contribution of catheter related bloodstream infections to these cases needs to be elucidated. The role of laboratory capacity and microbiology is critical to enable reliable HAI surveillance. Therefore, there is an intention in OCB to acquire field experience and to build knowledge on bacteriology (on sepsis in particular, though not exclusively).

## 3. LOOKING BACK AND AHEAD

### 3.1 LESSONS LEARNED FROM 2016

- Deficiency of IPC knowledge hampers the roll-out and the implementation of adequate and effective activities. This can only be addressed by training at all levels.
- The importance of IPC gained more and more recognition within MSF-OCB. Therefore, the demand for support and advice from the Head Quarters has been increasing. As a result, the direct and reactive support to the field needs is currently the primary activity of the IPC team. This hampers the effective and timely development of an overall, robust IPC general strategy (including trainings, monitoring and feedback tools, etc.).

### 3.2 PROSPECTS FOR 2017

- The team is actively recruiting IPC professionals at the hospital level in order to increase the compliance with correct IPC practices.
- The team will finalize an international IPC policy for MSF. Priorities will be hand hygiene, cleaning and disinfection of the environment, reprocessing of medical devices, and transmission-based precautions.
- OCB has started a new collaboration with the Swedish Innovation Unit to create a set of essential requirements for the “built environment”.
- The team will work on the prevention and surveillance of surgical site infections and catheter related bloodstream infections (e.g. by creating of evidence based bundles of care).

<sup>3</sup> 1.WHO Guidelines on Hand Hygiene in Health Care [http://apps.who.int/iris/bitstream/10665/44102/1/9789241597906\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/44102/1/9789241597906_eng.pdf)

# LABORATORY

## 1. OVERVIEW

Laboratory activities were well balanced in 2016, with some closing while others opening up. More projects introduced Polymerase Chain Reaction (PCR) diagnostics for Human Immunodeficiency Virus (HIV) and Tuberculosis (TB). Such projects included the Mauritania and Médecins Sans Frontières (MSF)-supported Ministry of Health (MoH) Unit for treating advanced HIV in Donka hospital, Guinea. Initial design of a lighter and more portable version of Viral Haemorrhagic Fever (VHF) Laboratory was developed in MSF Espace Bruno Corbé (EBC).

Most of the by UNITAID funded MSF-led HIV and Viral Load (VL) scale-up projects were handed over to respective MoH and other relevant partners after MSF had successfully demonstrated that scaling up VL testing/monitoring is possible in different contexts using different platforms and sample types. Different operational research studies complemented the implementation. The focus is now on improving provision of affordable and accurate HIV genotyping services for patients failing second line antiretroviral treatment (ART). In other projects (e.g. India, Ukraine), TB diagnostic activities are scaling up slowly. Also, the use of Point-Of-Care (POC) tests is greatly advancing with increased task shifting of the testing services to lay workers (nurses and counsellors).

## 2.2. PROGRAMME ACTIVITIES

### 2.1. LABORATORY ACTIVITIES AT A COUNTRY AND PROJECT LEVEL

In 2016, laboratory activities were supported in 30 projects across 16 countries (Table 1, Annex). In Dnepropetrovsk, Ukraine, activities on culture and drug sensitivity testing were initiated, as a support to the Ministry of Justice in scaling up laboratory activities on multidrug resistant tuberculosis (MDR-TB) in penitentiary system. The India project is primarily focused on MDR-TB and HIV care is secondary. More than 450 MDR-TB patients have been enrolled and more MDR-TB cases are expected, therefore the focus will be to support laboratory capacity building within governmental laboratories, rather than using private laboratory services. Although the Zimbabwe project has primary focus on HIV/TB, there is a slight shift to include non-communicable disease screening tests (e.g. HBA1C, glucose, lipid profile) similar to the Kibera project in Kenya. The Mozambique laboratory activities are now focused on supporting MoH laboratories in Beira and corridor projects. In Malawi, MSF is supporting HIV/TB activities in 4 prisons (with GeneXpert) and a laboratory in a district hospital in Nsanje, which has a big HIV cohort. At different levels of care in Sub-Saharan Africa, CrAg and TB lipoarabinomannan assay (LAM) rapid tests are more commonly used than in previous years. Two projects in Algeria were closed in 2016 due to political reasons, with an immediate halt of all activities.

### 2.2. USE OF A REFERENCE LABORATORY

Operational Centre Brussels (OCB) continued to work with the Institute of Tropical Medicine in Antwerp, Belgium, which served as an HIV reference laboratory. Additionally, collaborations continued with the National Institute of Communicable Diseases/National Health Institute (NICD/NHLS) and Global Laboratories in South Africa.

### 3. QUALITY CONTROL

OCB laboratories continued to be enrolled in the Proficiency Testing Programme of the NICD/NHLS so as to ensure high quality and staff motivation, as well as Centre for Disease Control External Quality-control Systems (CDC EQAS) programmes in certain regions in Nsanje, Malawi and Kinshasa, Democratic Republic of Congo (DRC) and in Zimbabwe. In addition, some countries such as Malawi and Zimbabwe, also receive their national Proficiency Testing scheme samples.

The use of POC tests (e.g. HIV rapid diagnostic test, HBsAg) by lay workers, nurses or counsellors in MSF projects suffers from lack of quality control schemes to assure the reliability of the results. In most cases, Proficiency Testing only assesses laboratories and laboratory technical activities, therefore mentioned task shifted rapid testing is not addressed. Nonetheless, development of such quality control system is ongoing.

## 4. OPERATIONAL RESEARCH AND DEVELOPMENTS

These included:

- GeneXpert HIV-1 Quantitative study: A laboratory validation: Harare, Zimbabwe.
- Evaluating DBS for HIV VL testing using the Abbott m2000 system: Thyolo, Malawi.
- Feasibility of GeneXpert Ebola Assay in MSF Ebola Program: Conakry, Guinea.
- Feasibility and costing study on the use of GenXpert for polyvalent testing in a decentralized rural project; Zimbabwe.
- Use of TB LAM and centrifuged urine on GeneXpert MTB/Rif for diagnosis of TB compared to sputum culture: Kinshasa, DRC.
- Diagnostic accuracy of CD4 cell count testing on BD FACScount in a mobile van in rural setting; Zimbabwe.
- Feasibility of using GeneXpert for HIV EID in a rural setting including birth testing: Nsanje, Malawi.

## 5. TRAINING

During 2016, three national staff attended a laboratory training organised by MSF Austria and two attended the laboratory workshop organised by Operational Centre Amsterdam (OCA) in Nairobi, Kenya.

National staff from Thyolo, Malawi attended quality assurance training for Abbott Dry Blood Spot (DBS) VL testing in Zimbabwe and laboratory staff from Guinea participated in the course for Biocentric VL testing in Swaziland.

### 6.1. LESSONS LEARNED IN 2016

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- More effort should be put in the development of rapid diagnostic tools for yellow fever in outbreak situations, considering the extremely high burden of samples being referred to reference laboratories during outbreaks.
- The Standard Operational Procedures (SOPs) on storage and transportation of DBS samples for HIV genotyping need improvement.
- Proficiency testing to POC tests conducted by nurses and lay workers ought to be provided, as it is the responsibility of the laboratory to assure quality of the results.
- Significant challenges are still being faced with the implementation of VL testing especially reagent re-calls, machine break downs and most recently, the Abbott calling for not using its dry blood spot WHO prequalified method due to its under-performance. Therefore, there is a need for the access campaign to lobby for countries to consider a mix of platforms.

### 6.2. PROSPECTS FOR 2017

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- There is an intention of MSF-OCB to acquire field experience and build knowledge on bacteriology, on sepsis in particular, though not exclusively. This will allow better identification and assessment of sepsis and related conditions seen in MSF clinics and hospitals.
- The lessons learned from the Ebola “Laboratory Container” were used to design a lighter VHF Laboratory set-up which can be easily deployed in remote settings. Its fine tuning for field deployability is planned to be re-assessed and improved.
- Molecular biology (GeneXpert) for Hepatitis C diagnosis and monitoring was in the preparation phase in 2016, and the early implementation phase is planned for 2017.
- Opening of field laboratory positions and possibilities for laboratory training will be further promoted in operations.

#### Operational Prospects:

- In Ukraine, laboratory support will be given to a national referral hospital laboratory (Zhytomir hospital) for MDR-TB activities.
- Use of GeneXpert HPV for HPV cancer screening using both self-collected and provider collected swab samples will be initiated in Zimbabwe.
- Support and capacitating for MTB laboratory activities of MoH in Mumbai project will be initiated.
- In order to reduce mortality among advanced HIV patients, decentralization of CrAg and TB LAM testing will be initiated in Eshowe, KwaZulu-Natal.
- Use of MTB/Rif Ultra cartridges is expected to be implemented in Kinshasa, DRC.
- Use of GeneXpert Omni platform POC especially for intensified TB case finding will also be initiated.
- Mobile laboratory (with GeneXpert) will be used among the highly mobile commercial sex workers in the corridor project in Mozambique and Malawi.



# MALARIA

## 1. OVERVIEW

Malaria is still a leading cause of morbidity and mortality in Operational Centre Brussels (OCB) projects. Countries particularly affected are South Sudan, the Democratic Republic of Congo (DRC) and the Central African Republic (CAR).

In 2016, the implementation of preventive tools such as Long Lasting Insecticide Treated Nets (LLIN) was further reinforced. However, due to emerging resistance to pyrethroids, OCB switched to Ppiperyonyl Butoxide (PBO) treated bed-nets, as a transitory measure until new generation of bed-nets become available. In addition, new approaches to vector control for malaria are being piloted in two projects, in Bangassou (CAR) and Doro (South Sudan).

The pan Parasite Lactate Dehydrogenase (pLDH) based Rapid Diagnostic Test (RDT), which becomes negative much quicker after completion of treatment than the Histidine Rich Protein (HRP) based test (SD Bioline) currently in use, was adopted since it leads to less false positive cases in settings with high incidence and treatment rates. The pan pLDH-based RDT will continue to be used as first choice in hyper and holoendemic areas, as well as in areas with intense seasonal transmission, malaria outbreaks and complex emergencies. Further roll-out of this type of test is foreseen in 2017.

Efforts to strengthen case management in the community were intensified through a community based project that started in Bangassou and projects in Kouroussa (Conackry, Guinea) and Bili (DRC) which specifically aimed at Integrated Community Case Management (ICCM).

A malaria control project was started in Venezuela, an atypical setting for Médecins Sans Frontières (MSF), linked to an illegal gold mining activity and with a 80% of the caseload consisting of Plasmodium vivax.

A specific operational research project in Cambodia addresses the emerging threat of artemisinin resistance.

## 2. PROGRAMME ACTIVITIES

### 2.1. MALARIA CASES

In 2016, the total number of confirmed malaria cases treated in OCB projects was 241,218, a decrease of 27% compared to 2015. This decline is mainly explained by a reduction in cases from the DRC following the closure of the Bikenge project, a decrease from South Sudan, and the stopping of activities in Niger. Nevertheless, about 91% of all malaria cases were treated in 3 missions in DRC (36%), CAR (22%) and South Sudan (33%).

### 2.2. DIAGNOSTICS

During the course of 2016, a total of 463,880 RDTs were performed in OCB projects and 52% of these were positive. The proportion of positive RDTs was highest in projects such as Bili, DRC (79%) and Blue Nile State (67%); which indicates high malaria endemicity in these settings.

### 2.3. CASE MANAGEMENT

A new project was started in Siphontes, state of Bolivar, Venezuela. The main economic activity of the area is illegal mining and the way mining is done creates a lot of breeding sites. Since the internal migrant workers come from non-endemic areas they are very vulnerable.

The Project focusses on case management and vector control. Plasmodium vivax accounts for 80% of cases. This setting is unusual for MSF because of the high proportion of Plasmodium vivax cases as well as the fact that elimination in principle is possible since the disease had been eliminated until the last decade of the previous century.

### 2.4. CASE MANAGEMENT – SEVERE MALARIA

The roll out of the use of injectable artesunate, a first-line treatment for severe malaria in MSF projects is completed. While rectal artesunate remains one of the most effective

and safe pre-referral treatments for severe malaria at the peripheral healthcare level, the drug is still under-used in quite a few of our projects. However, for the moment we also have supply problems, as sufficient heat stability of the available product is not assured.

### 2.5. COMMUNITY MANAGEMENT OF MALARIA

Community activities are ongoing in the projects of Bangassou in CAR, Bili in DRC and Pibor in South Sudan. Efforts to strengthen case management in the community were enhanced specifically through ICCM projects in Kouroussa (Conackry, Guinea) and Bili (DRC).

### 2.6. OUTBREAKS

During the course of 2016, major malaria outbreaks in North Kivu, DRC were addressed, mainly by providing by providing Assertive Community Treatment (ACT). However, the increase of cases seen in North Kivu

in the last 3 years seems to have stabilized at a high level. The causes of this increase and possibilities to improve prevention are being investigated.

## 2.7. PREVENTION

Vector control through the distribution of LLINs was further reinforced. However, due to emerging resistance to pyrethroids, MSF-OCB switched to PBO treated bed-nets as a transitory measure until new generation of bed-nets become available. Furthermore, new approaches to vector control for malaria are being piloted in Bangassou (CAR) and Doro (South Sudan). More details on these activities are described in the WASH part of the report.

## 3. OPERATIONAL RESEARCH

The research project in Cambodia, in a district of Preah Vihear province, has been further expanded during the malaria transmission season of 2016/2017. The project aims to contribute to local elimination efforts of malaria in areas where partial resistance to artemisinin, the current first line antimalarial drug exists.

The intervention is based on a combination of a strengthened system of early diagnosis and treatment of patients with malaria symptoms and strategies for voluntary testing and treatment of people without symptoms but with known risk exposure to malaria infection, such as working in the forest or plantations. In addition to the standard RDT, a blood sample is sent to a reference laboratory for Polymerase Chain Reaction (PCR) testing for detection of molecular markers correlating with drug resistance among other examinations.

During the 2015/2016 malaria season, the MSF team visited 3 “test villages” on a monthly basis for 3 months, and 3,060 people without symptoms were tested. This led to the identification and early treatment of 33 patients carrying *Plasmodium falciparum* malaria parasite thereby lowering the potential of transmission. While this active “screen and treat” strategy has been expanded to a total of 5 villages during the 2016/2017 malaria season, an alternative strategy is piloted in 4 other villages where a “permanent screening and treatment” opportunity is offered by the village malaria workers to villagers with risk exposures.

Besides the above mentioned strategies, MSF continues to support the village malaria workers to ensure early diagnosis and treatment in case of fever in all 23 villages of the district.

## 4. LOOKING BACK AND AHEAD

### 4.1. LESSONS LEARNED IN 2016

- The currently used HRP2-based test gives a lot of false positive results in settings with high transmission rates and treatment frequency. For this reason, the Malaria Working Group recommends the use of pLDH-based RDTs in such settings. However, its correct use and sensitivity under field circumstances needs to be monitored and documented.
- Malaria transmission in certain parts of South Sudan and DRC which were formerly of low and medium endemicity, seem to have become highly endemic. This phenomenon and its causes is still poorly understood and the implications in terms of identifying and establishing appropriate strategies for malaria control need to be developed.
- Access to malaria care is seriously hindered by general access to care and this needs to be better documented and strategies for improvement developed.
- There is a need to improve diagnosis and treatment of patients with fever but negative on RDT, because the current default treatment with antibiotics, leads to unnecessary treatment and the subsequent development of resistance to antibiotics.

### 4.2. PROSPECTS FOR 2017

- A pan pLDH-based RDT (which has a better specificity compared to the currently used HRP2-based RDT) will be implemented in settings with high transmission. Test performance in field conditions will be monitored with a validation study in Bili (DRC).
- The operational research planned in DRC will continue to focus on the issue of adherence to ACT.
- A treatment and vector control programme targeting the mining areas in Bolivar, Venezuela will start next year. Operational research focussing on two topics: the effectiveness of the use of chloroquine for *Plasmodium vivax* and on the pool of asymptomatic cases will be conducted.
- An intervention for treating malaria at community level, health centres and paediatric wards will be initiated in Kouroussa, (Conakry, Guinea) and Bili (DRC). The appropriateness of implementing seasonal malaria chemoprevention will be evaluated in Kouroussa (Conakry, Guinea) using collected programme data.

# MEDICAL STRUCTURES AND HOSPITAL MANAGEMENT

## 1. OVERVIEW (EXCLUDING EMERGENCIES)

In 2016, the total number of medical structures with an in-patient department in Médecins Sans Frontières-Operational Centre Brussels (MSF-OCB) was 19. Four of the structures were general hospitals run in collaboration and within Ministry of Health premises in Afghanistan - Ahmad Shah baba, Democratic Republic of Congo (DRC) - Masisi, Bili and Central African Republic (CAR) - Bangassou. Eleven facilities had service/disease specific activities, mostly Human Immunodeficiency Virus/Tuberculosis (HIV/TB), Sexual and Reproductive Health (SRH) and trauma centres: Afghanistan (Khost), CAR (Bangui, Castor), Haiti (Tabarre), Pakistan (Timurgara), Nigeria (Okpoko), Burundi (Arche), Lebanon (Shatila), DRC (Kinshasa, Nyabiondo) and Guinea (Conakry). The remaining four facilities had hospital-based activities related to the support of primary health care for refugees in camp settings: South Sudan (Doro, Pibor, Bor) and Mauritania (Bassikounou).

## 2. PROGRAMME ACTIVITIES

### 2.1 NUMBER OF BEDS

The number of beds in MSF-OCB medical structures portfolio remained stable at 1,100 beds. There were 11 structures with up to 50 beds, 5 facilities with 50–100 beds and 3 hospitals with more than 100 beds (Figure 1).

### 2.2 NUMBER OF ADMISSIONS

With regards to number of admissions including maternity and Inpatient Therapeutic Feeding Centres (ITFC), two hospitals with the largest volume are based in Afghanistan, one in DRC and two in CAR (Figure 2).

### 2.3 HUMAN RESOURCE

The total number of human resources was increasing every year and to date there are

4,322 national staff (including medical and non-medical staff) and 207 expatriate staff with a ratio of 1 expatriate per 20 national staff.

The trauma centre of Tabarre in Haiti had the largest number of human resources standing at 519 staff for 121 beds. This is due to the specialized surgical care that is being provided in this particular medical facility. On the contrary, Masisi general hospital in DRC with the highest capacity of 220 beds had only 366 staff (Figure 3).

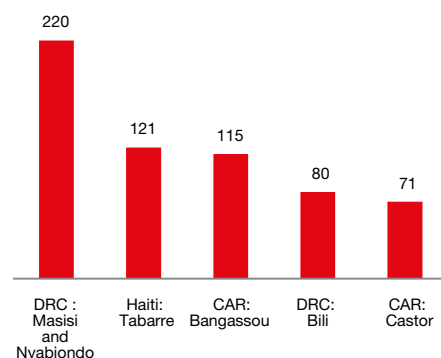
## 3. DEVELOPMENTS

The Hospital Management Training for medical staff is conducted twice a year, with forty participants trained in 2016.

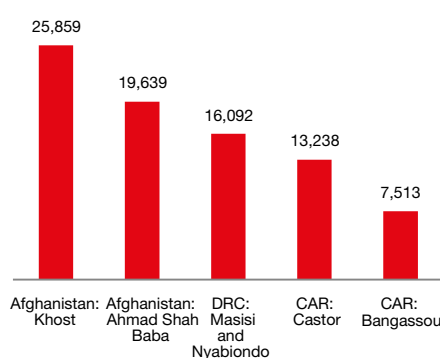
In order to support hospitals and medical structures more efficiently, a new Health Structures Unit was created at the end of

2016. This Unit is comprised of different profiles of medical and non-medical individuals involved in management of hospital activities. The overall objective of this Unit is to continuously improve quality of care provided within MSF hospitals. Different referents are part of this Unit which encompasses main disciplines involved in a hospital management, including pharmacy, biomedical equipment, infection prevention and control, nursing care, human resources, water and sanitation and construction. The Health Structures Unit has the mandate to develop specific tools for management of large medical facilities and work in close collaboration with the Operations Department to support implementation and management of medical activities in MSF hospitals.

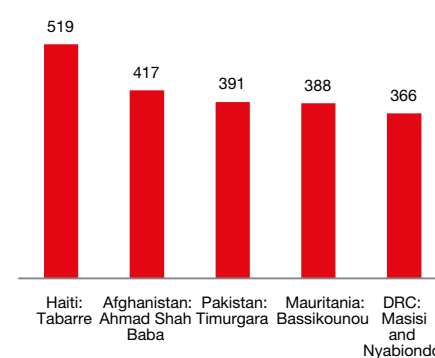
**Figure 1: Number of beds in the top OCB medical structures, 2016**



**Figure 2: Number of in-patient admissions in the top five OCB medical structures, 2016**



**Figure 3: Top five OCB medical structure in terms of human resource (medical and non-medical), 2016**



## 4. LOOKING BACK AND AHEAD

### 4.1. LESSONS LEARNED IN 2016

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- The hospital based activities are increasing within OCB; therefore more comprehensive approach with an interdisciplinary support is necessary.
- A contact group for hospital management and quality was created with other MSF sections, sharing of information, tools and data is ongoing.
- Although one of the objectives was to get a global overview and inventory of the situation within OCB (staff ratios, cost, workload, etc.), this was more challenging than anticipated, since the existing reporting system and data collection is programme oriented. Therefore, it was challenging to find and centralize information and data in relation to the number of beds, human resources, budget, etc.

### 4.2. PROSPECTS FOR 2017

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- Due to hurricane Matthew in Haiti, a new project to support the SRH component in the Port-à-Piment health centre will be launched.
- The Bar Elias hospital in Lebanon is designed through a multidisciplinary Patio and the opening is planned for 2017.
- A new SRH project will be launched in Barkeol hospital in Mauritania.
- In order to support the process of reconstruction after Ebola outbreak in Sierra Leone, a new paediatric and maternity hospital will be built in Kenema district.
- Support departments are working to create a greater capacity to treat war wounded in improved mobile surgical units in Iraq and Syria.
- The first French session of the Hospital Management Training is planned for 2017.



# MENTAL HEALTH

## 1. OVERVIEW

The portfolio of projects with a Mental Health/Psycho-Social (MHPS) component, remained quite stable, 53 projects during the course of 2016, compared to 48 in 2015. However, many projects closed during the second semester, or were emergencies/short term interventions, leading to a significant decrease of the number of projects. This is partially due to the fact that the projects supporting migrants in transit, in Serbia and Greece, closed after the EU/Turkey agreement. Nevertheless, these projects integrated psycho-social support into Primary Health Care (PHC). Therefore, 36 projects with MHPS component remained open at the end of 2016. In parallel, several exploratory missions which included psychological care were conducted during the year upon which, some of the missions, such as Belgium and Venezuela, defined to initiate mental health activities in 2017.

The number of emergencies/short term interventions was quiet low (6), including clinics for Ebola survivors and three interventions after natural disasters in Ecuador, Haiti and Indonesia. Only Burundi was related to acute conflict, when usually emergency conflict-related projects represent an important part of MSF Mental Health (MH) activities.

Models of care in Europe migration projects changed, altering from Psychological First Aid (PFA) to clinical MH interventions for stranded migrants, provided in clinics out of the official reception facilities (Lesbos Island and Thessaloniki in Greece and Belgrade in Serbia). More projects had been developed in the Middle East targeting migrants, including Tunisia, Turkey and two new projects in Lebanon. In addition, there was a focus on destination countries, including development of a model of care in Sweden (assessments were conducted in Belgium and Norway). In all migration projects, the psychiatric aspect was reinforced, notably through referrals in the existing systems (public or private).

The clinics for Ebola survivors were developed in Sierra Leone, and a new one in Guinea opened in Conakry, with a short-term intervention in Focariah (in Guinea, clinics targeted survivors, their relatives and also staff who was involved in the Ebola Management Centres). This process was guided by study conducted in Liberia which showed a high prevalence of mental disorders, especially depressive and post-traumatic disorders amongst the survivors. The medical complaints were often tiredness and general pain, with aetiology that can be either medical or psychological. MH care was well accepted in both projects, and the MH teams treated 1,233 patients, many of whom returned for follow-up sessions.

Lastly, psychiatric care continued to be developed within Operational Centre Brussels (OCB) in general. Some expatriate psychiatrists went to the field (Mauritania, Kenya, Malawi and Sierra Leone) or were recruited at the field level (North Lebanon, Greece). Operational Centre Paris (OCP) and OCB organized a one week training in French in Uganda, to complement the yearly one from Operational Centre Amsterdam (OCA). OCB general practitioners/clinical officers from Mauritania and Central African Republic (CAR) were trained on the diagnosis and management of the most common mental disorders. In PHC in Kibera, Kenya, an expatriate psychiatrist developed detailed protocol on management of mental disorders and implemented it with training and supervision, proving that task-shifting for identification and treatment of mental disorders could be successful without highly specialized MH professionals.

## 2. PROGRAMME ACTIVITIES

Excluding Human Immunodeficiency Virus/Tuberculosis (HIV/TB) programmes (where MH is included into "Patient and community support"), in 2016 Médecins Sans Frontières (MSF)-OCB provided MH activities in 53 projects across 26 countries. The decrease of emergency interventions has been com-

pensated by opening 11 new mid-long term projects with MH component. Many of them were related to migration in countries where MSF was present (Lebanon, Serbia), but also new countries (Turkey, Tunisia, Sweden). Compared to 2014 (before 2015 peak with Ebola and numerous large interventions), the activities doubled from 25 to 53 projects (112% increase).

In terms of the volume of activities, 15 projects provided more than 1,000 individual consultations (which is not comparable to medical activities, as one individual session lasts one hour on average). The implementation of group sessions depended on socio-cultural contexts, problems of patients and community needs. Therefore, group sessions had very diversified objectives (psycho-

education, therapeutic, peer support, recreational, etc.).

Two examples of integration of MH activities into OCB contexts are presented below.

## 2.1. INTERVENTION TO INTEGRATE MENTAL HEALTH DISORDERS WITHIN NON-COMMUNICABLE DISEASES PROGRAMME INTO PRIMARY HEALTH CARE IN KIBERA, KENYA

The residents of Kibera face daily humanitarian needs; inadequate living conditions, deplorable hygienic conditions, lack of basic public infrastructure and high levels of poverty result in high vulnerability for multiple medical conditions, including mental disorders. The treatment gap is especially high for those with mental disorders as this population is particularly marginalized and vulnerable. Strong stigma, lack of understanding of the nature of mental disorders and its potential for treatment prevent people from seeking care. Myths and misconceptions of mental disorders abound in Kibera, where patients generally come to the medical clinic as a last resort, after having already been to the priest, pastor or traditional healer.

MH care is incredibly difficult to access, thus very few of those in need receive adequate care. In Nairobi, there are four other public health centres that reportedly can provide out-patient mental health care (one day per week and at a fee). Generally, fees are charged for the file chart, consultation and medication. Mathari Hospital has a high rate of readmissions which is likely directly linked to the lack of access to out-patient follow up.

Since MSF is focusing on Chronic Non-Communicable Diseases (CNCD), a package for proper management of CNCDs was developed in 2015, including clinical guidelines, Patient Support (PS) tools and advocacy. In 2016, an expatriate psychiatrist developed a protocol for diagnosis and management of the most common mental disorders (psychosis, bipolar disorders, depression, anxiety disorders and Multiple Unexplained Physical Symptoms, MUPS) to be included in the CNCD package. Treatment for mental disorders always involves psycho-education for the patient and family which should be empowering, provide facts, identify coping strategies and include advice on overall wellbeing. Depending on the specifics of the case, a patient may also need psychiatric medication and/or specific on-going counselling. Whenever possible, the patient's fam-

ily/support system should be involved in the treatment.

Trainings were provided (for the clinical officers, psychiatric nurses, nursing team supervisors, and a separate one for patient support team – counsellors, social workers and health promoters), followed by clinical supervision for the implementation of the protocol. Detection of cases, flowchart of patients and data collection (using Epidata) have been defined, as well as external referral system for psychiatric hospitalizations (e.g. in Mathare mental hospital) or for specialized care (e.g. Médecins du Monde or Sapta for substance abuse). For the six first months of 2016, the average number of new cases was 32 per month, with the average of 45 follow-up consultations. By the end of 2016, 319 patients presenting with mental disorders have been diagnosed and proposed a therapeutic setting.

The management of MH disorders is recognized by Kenyan Ministry of Health (MoH) as part of the services that should be offered at primary level of care, therefore these services could be handed over in 2017. This project shows the feasibility of integrating MH into PHC, without specialized professionals, but with a task-shifting system. This is the first time in MSF CNCD project that MH is not considered as support to the adherence, but also as a CNCD by itself.

## 2.2. INTERVENTION FOR MIGRANTS IN RECEPTION COUNTRY (EXAMPLE OF GOTENE IN SWEDEN)

A Project based in Götene municipality in the Västra Götaland aims to provide psycho-social support to Asylum Seekers (AS) living in two asylum centres, individual accommodations, as well as centres for unaccompanied minors. The objective of the project is to improve the mental health of AS by screening for mental health disorders and organizing support activities.

A mental health screening is proposed to all AS for rapid assessment of MH conditions using RHS-13 screening tool. If a client has been screened at or above the cut-off score considered as positive, MSF counsellors propose an in-depth assessment (second level) that can be conducted immediately after or upon appointment. In-depth assessment consists of a semi-structured interview. MSF counsellors assess each item which scored very high, explore potential traumatic life-events, resilience and coping mechanisms as well as functionality reduction.

This system of triage allows MSF staff to categorize clients who require low/mild level of psycho-social support or more-intensive psychiatric/psychotherapeutic approach. For psychiatric cases MSF supports the referral to PHC for diagnosis/treatment by qualified psychologists or psychiatrists. A referral to the Red Cross trauma centre for victims of torture or extreme violence can be done only by the medical doctors in PHC. Furthermore, unaccompanied minors (UAM) in need of mental health support are referred to Child and Adolescent Psychiatry through the social services.

For clients who need low/mild level of psycho-social support MSF can propose the following package of services:

- Psycho-education group sessions which aim to teach about the definition of mental health; reinforce participants' strengths, resources and positive coping mechanisms; promote mental health services and identify clients in need of more specialized care;
- Basic individual or group counselling which aims to support clients with non-severe mental health conditions and prevent the development of mental health disorders by encouraging positive coping mechanisms;
- Psychological first aid;
- Health information and cultural briefing about Sweden.

From September until December 2016, a total number of 122 AS have been screened (first level) and 73 clients were offered an in-depth assessment (60%). A total number of 62 AS have participated to an in-depth assessment (51%). However, 15% didn't participate in in-depth assessment, due to clients being transferred and loss of contact when MSF has pulled-out of the centres. Majority of clients who attended in-depth screening were male migrants (66%). Most of them arrived in Sweden between seven and eleven months (48%) or between one or two years ago (48%).

The outcomes of in-depth assessment indicated that 87% of patients needed follow-up consultations; 38% of the AS required specialized mental health care and were referred to PHC; 1 client was referred to the Emergency Department; 6% were referred to Child and Adolescent Psychiatry through the social service and 2% have been supported with a self-referral for psychiatric care. The most common patterns of symptoms were

of depression (28%), anxiety (26%), PTSD (13%) and psychosomatic problems (19%).

### 3. TECHNICAL GUIDANCE

Over the course of 2016, a number of activities undertaken to develop or revise MH tools and guidelines included:

- Final drafting of an International Mental Health and Psycho-social Guideline.
- Drafting of a new standardized MH database.
- Participation in Adolescent Health guidance paper with Sexual and Reproductive Health (SRH) and Paediatric care Units.
- Participation in a protocol development "Palliative care for new born".
- Participation in elaboration of the content for the Training of Trainers for decentralized Sexual Violence training, for MHPS support module. Participation in writing of SRH addendum "Birth crisis: caring for the family experiencing perinatal or maternal death" (advanced life support in obstetric training).
- Within the MH International Working Group (IWG):
  - Finalization of the new three-year Plan of Action.
  - Editing and poster development of the 2015 international MH policy.
  - Follow-up of short guidance development for the use of new models and approaches (finalization of mindfulness, draft of Cognitive Processing Therapy, CPT and Narrative Exposure Therapy, NET).
  - Participation in a chapter development "Same day/rapid Anti-Retroviral Treatment initiation counselling"
  - Review of the UNHCR guideline, the chapter on "Health information system"
  - Review of the psycho-social emergency kit
  - Initial proposition of adding/removing psychotropic medication in the Essential Medicine List
  - Finalization of the code of conduct for international and national MH staff
  - Finalization of psychological certificates (for adults and children) with the legal department.

### 4. TRAINING, CONFERENCES/ EXTERNAL PLATFORMS AND OPERATIONAL RESEARCH

In 2016, the following trainings (MSF or external) included MH component:

- The SRH training course for nurses and midwives: a module on psychological support to survivors of sexual violence,
- First Line Medical Training (FLMT): one day module on integrated health in urban refugee camp (SRH + MH), conducted twice in 2016,
- Health Promotion (HP) course: a module on introduction to MH in humanitarian contexts,
- Public Health Course (University of St Louis, Missouri): a module on Mental Health in humanitarian contexts.
- Centre d'enseignement et de recherche en action humanitaire (CERAH) seminar on sexual violence in conflicts and emergencies (Geneva): 2 modules (psychological support for survivors of sexual violence and PFA),
- Institut de Médecine tropicale of Antwerpen (IMT): Mental Health and psycho-social support in humanitarian contexts.

OCB, in collaboration with the four other Operational Centres, participated in the organization and facilitation of two-week MH training courses in Netherlands for field psychologists and MH supervisors (national and international staff), conducted twice during 2016.

In addition of the yearly one week OCA training in psychiatry in Kenya (diagnosis and management of the most common mental disorders for general practitioners/clinical officers and psychiatric nurses), a decentralized French version was organized by OCB and OCP in Uganda.

Participation to MSF workshops:

- People who use drugs (1 day): psychiatric aspects of addiction and psychological intervention in management of addiction
- Hepatitis C (1 day)
- Community (2 days): MH in community
- Torture (3 days)

International conferences/platforms:

- Symposium World Psychiatry association in Hamburg "People on move, asylum seekers and refugees".
- MH IWG presentation at the US and Nordic general assemblies.
- MSF scientific days in London with 2 posters linked to MH ("Psychological distress amongst Ebola survivors discharged from Elwa 3 in Monrovia, Liberia" and "MH and trauma: MSF experience with asylum seekers in Sicily") and one oral presentation ("Refugee crisis in Europe: health status experience and MH problems of transiting refugees and migrants on the Balkan route in 2015")
- MSF Scientific days in South Asia, one poster ("Not forgetting severe MH disorders in emergencies: a descriptive study from the Philippines")

Operational research:

- MSF Operational Research Day: The following 3 studies presented were linked with MH:
  - "Traumatizing journeys and inhospitable stays: MH condition amongst migrants/refugees and asylum seekers in transit countries and upon arrival in Europe",
  - "Psychological distress amongst Ebola survivors discharged from Elwa 3 in Monrovia, Liberia",
  - "Interdisciplinary care for victims of survivors of SV, torture and traumatic events- lessons learned from Maadi Clinic",
- Five articles were published<sup>1</sup> and five are on-going (3 of these integrated qualitative methods).

### 5. HUMAN RESOURCE

Regarding human resources (HR), the number of positions opened for MH expatriates is similar to the previous year (36 positions compared to 40 in 2015), as well as the number of psychologists/psychiatrists who have been deployed (50 versus 54 in 2015). This relatively low number of departures compared to previous years corresponds partially to the decrease of emergencies, which are HR consuming. In addition, the MH professionals working in European contexts such

<sup>1</sup> "Psychological distress among Ebola survivors discharged from an Ebola treatment unit in Monrovia, Liberia –a qualitative study"  
 "Not forgetting severe mental disorders in humanitarian emergencies: a descriptive study from the Philippines"  
 "Mental health and trauma in Asylum seekers landing in Sicily in 2015: a descriptive study of neglected invisible wounds"  
 "A crisis protection and safe passage: violence experienced by migrants/refugees travelling along Western Balkan corridor to Northern Europe"  
 "Post-traumatic stress responses amongst refugees following xenophobic attacks in Durban, South Africa"

as Italy or Greece are considered as national staff, thus not counted in field deployments. Among the expatriates, 7 out of 50 were first mission (14%), which isn't a sufficient ratio to develop/renew the pool of MH profession-

als. Because of the workload and still consequent number of projects, a MH referent support position was recruited in April for one year, in parallel to increased working hours of the MSF psychiatrist consultant.

## 6. LOOKING BACK AND AHEAD

### 6.1. LESSONS LEARNED IN 2016

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- The projects on migration switched from activities targeting transiting populations (focusing on PFA and psycho-education) to MH care for populations which are staying longer in transit countries, due to the closure of borders. Therefore, strategies have been adapted in contexts like Greece or Serbia. In parallel, the focus on migrants living in informal settings (out of the formal camps or accommodations) was reinforced. The 3 projects targeting victims of torture/ill treatment have been consolidated and a 4th workshop took place, including external actors. Projects in destination countries (Sweden and Belgium) planned for 2017 complete the care provided along the whole journey.
- It was the first year that operational research integrated or focused on mental health, both in internal and external platforms. Several articles have been published, some presented in OCB Operational Research Day or Scientific Days in London.
- This aspect contributes to support the communication and understanding on the problematic of the beneficiaries and content of the MHPS activities. More prospective research should be developed, as well as the integration of qualitative methods, contributing to development of different perspectives and complementing quantitative methods.
- The MH IWG size increased (from 5 to 9 members, due to a second MH referent recruited in most of the sections). Since the international MH policy elaborated last year, the collaboration continued and many of the guidelines/tools are now developed/ reviewed at intersectional level.

### 6.2. PROSPECTS FOR 2017

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- Although some tools and guidelines regarding children (e.g. MHPS care for children, screening tools like PsyCa, psycho educational material for children and parents) have been developed, the implementation of activities specifically dedicated to psychological support for children remains low, compared to the prevalence of children in MSF contexts. There is a need to pay more attention to this vulnerable group, especially in contexts with sexual violence toward children, as well as conflict/post-conflict/migration projects. For the latter, the unaccompanied minors, mainly from Afghanistan remain a challenge and it would be interesting to develop an appropriate medical/MH package, as this population has specific needs and can be difficult to access.
- HIV-TB patient support often focuses too much on education, any yet mental disorders (especially depression) can have a great impact on adherence to treatment, especially with vulnerable sub-groups (patients with high viral load, sex workers, adolescents etc.). It would be interesting to develop pilot HIV projects that focus more on detection and treatment of depression amongst these vulnerable groups. There are many examples worldwide that demonstrate the feasibility of task-shifting for MH care, and in addition practical tools already exist (e.g. PHQ9 for screening, WHO-MHgap).



# MIGRATION IN EUROPE

## 1. BALKAN ROUTE

### 1.1 CONTEXT

Year 2016 started with the peak of so called 'refugee crisis'. Between June 2015 and March 2016 almost a million refugees entered Europe through Greece and transited along the Balkan route. They were fleeing wars and instable contexts, mainly coming from Syria, Iraq and Afghanistan.

As of February, one country after another, along the route sealed their frontiers with a domino effect. In March, with the signing of the European Union (EU) -Turkey agreement there was a major context change as sea arrivals to the Greek islands almost completely stopped. Around 60,000 refugees trapped in a limbo in Greece, were placed in newly opened camps that were spread all over the country, most of them not reaching the minimum standards of reception conditions. With the implementation of the agreement, on the 21st of March, Médecins Sans Frontières (MSF) took a difficult but controversial decision to stop its activities inside Moria camp, on the island of Lesbos, which was transformed into a closed centre. Few months later, in June, MSF stopped accepting funds from the EU to clearly state its opposition to the EU migration policies.

With the subsequent increase of other actors offering medical services, MSF gradually decreased the size of the interventions, but not the commitment to the cause.

### 1.2. MEDICAL ACTIVITIES

One of the milestones of MSF's approach to migration has been the flexibility of activities that are adaptable to the changes of migration routes and context to follow the emerging needs of the beneficiaries.

#### 1.2.1. PRIMARY HEALTH CARE MOBILE CLINICS

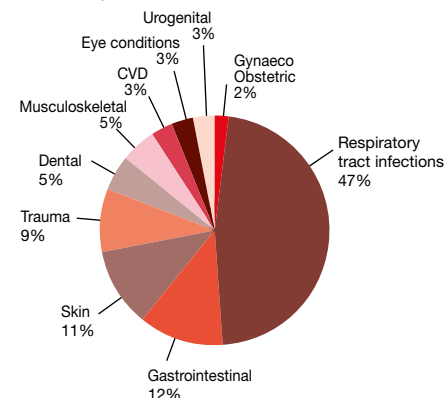
In 2016 Operational Centre Brussels (OCB) had Primary Health Care (PHC) and mental health (MH) mobile clinics in several locations, adapting to the changing of migration routes. The teams have been constantly repositioning to make sure they would respond to the needs where they were arising.

In Greece, the mobile clinics were carried out in the islands of Lesbos, Kos, Leros and in Idomeni and surrounding camps. After the evacuation of Idomeni, the activities were continued in the newly set-up camps around Thessaloniki.

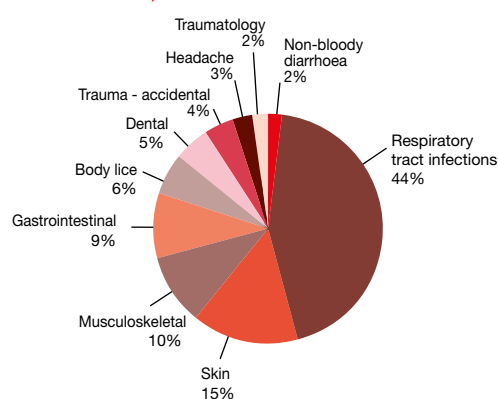
In Serbia, MSF teams worked at the entry (Presevo) and exit points (Sid and Subotica) at the frontiers and in the capital (Belgrade) where people congregate before trying their chance of crossing the borders into EU.

In 2016 MSF teams performed a total of 46,718 Out-Patient Department (OPD) consultations in Greece and 39,801 OPD in Serbia. Figure 1 and 2 show the trends of total number of PHC consultations by month per location, with a sharp decrease of numbers

**Figure 3: Most common morbidities in MSF OCB clinics in Greece, 2016**



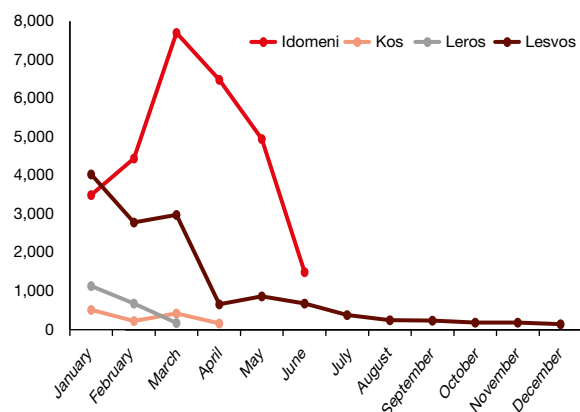
**Figure 4: Most common morbidities in MSF-OCB clinics in Serbia, 2016**



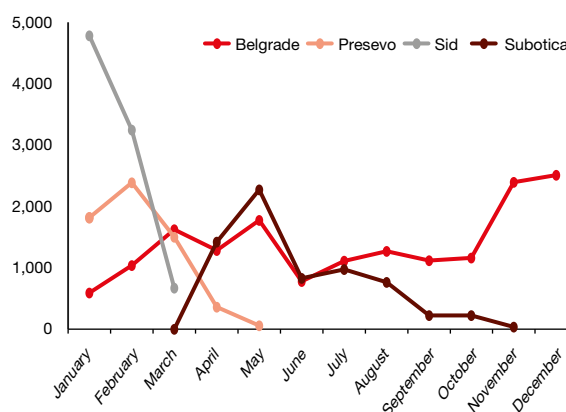
of consultations after the implementation of the EU-Turkey agreement.

Respiratory Tract Infection (RTI), Gastro Intestinal (GI) diseases and skin infections are the most common reasons for consultation (Figure 3 and 4). Nearly one out of ten consultations was due to trauma-related injuries.

**Figure 1: Total number of PHC consultations per location in MSF-OCB clinics in Greece, 2016**



**Figure 2: Total number of PHC consultations per location in MSF-OCB clinics in Serbia, 2016**



### 1.2.2. VICTIMS OF VIOLENCE

Exposure to violence is one of the core features of population fleeing. Along the Balkan routes, our teams have been providing physical and mental health care to persons who have fled their countries due to conflicts and ill-treatment and have treated people who have been victims in the countries along their journeys. The closure of the frontiers resulted in several episodes of violence at the Greece and former Yugoslav Republic of Macedonia border where our teams assisted the casualties of violence at the borders. Several episodes of violence were also recorded and documented at the frontier between Serbia and Hungary.

For the people on the move, on-spot medical care, emotional support and medical certification were provided. However, in the project for victims of torture based in Athens, interdisciplinary continuous rehabilitation package for migrants living in the capital and its outskirts was offered. A team of psychologists, medical doctors, physiotherapists, social workers and cultural mediators works together for healing the scars left by torture, in collaboration with local partners. After the implementation of the EU-Turkey agreement the number of new cases increased by four times, from an average of 10 per month to almost 40 per month.

### 1.3.3. MENTAL HEALTH

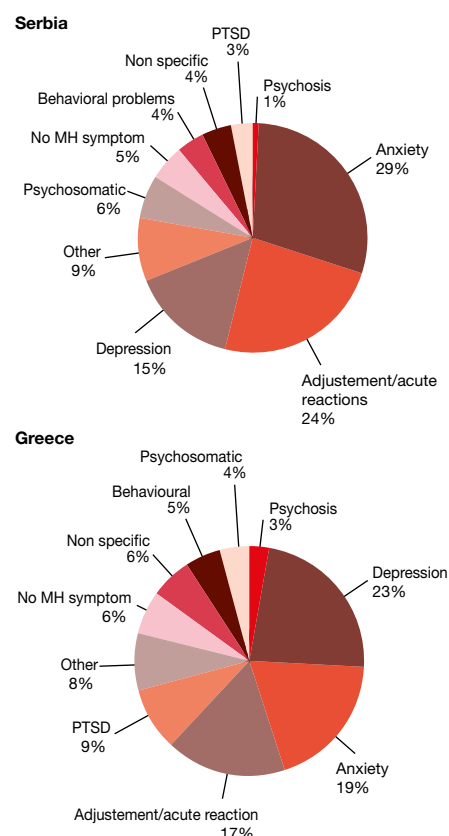
MH was integrated into medical activities in all the PHC clinics in Greece and Serbia. Indeed, migrants often faced war, persecution and extreme hardships in their countries of origin. Also, many experienced displacement and hardship in transit countries as they embarked on dangerous travels. Lack of information, uncertainty about future, potential hostility, changing policies, undignified conditions in transiting countries add additional stress and require multiple adaptations in short periods of time. In addition, pre-existing social and

MH problems can be exacerbated and migration commonly erodes pre-existing protective support. Until end of March, migrants were spending very short time in Greece and Serbia, focusing on continuation of their journey to their final destination. During this time, MH activities were mainly focusing on: (i) group psycho-education sessions to strengthen the resilience and positive coping mechanisms; (ii) single-shot MH individual sessions to provide basic emotional support to migrants to deal with their current stressful experience related to journey and the uncertainty of the close future; (iii) referral of severe/acute cases to existing public MH facilities and (iv) limited number of follow-up sessions

After the closure of borders, the hardship of daily life in official and unofficial camps (and detention in hotspots in Greece) and absence of perspectives have been severely detrimental to the MH of migrants stranded in these countries. The MH teams observed an important increase of severe symptoms (disabling level of suffering) that impacts the daily functioning. The psychological distress among MSF patients is expressed in a wide range of emotional, cognitive, physical and behavioural/social problems. Due to the longer duration of stay and increase of MH needs, MSF approach shifted consequently towards a more clinical MH care that can include follow-up sessions, external referrals for psychiatric care and legal certification linked with MH condition for vulnerable cases.

The majority of patients are adults between 19 and 45 years old (the number of minors in Serbia is significant, 17% corresponding mainly to unaccompanied minors). In Greece, females represented 44% of our patients; while in Serbia 75% of the patients seen were male. The main nationalities seen are similar in both countries, although in Serbia most of the patients are from Afghanistan, while in Greece from Syria.

**Figure 5: Distribution of main MH symptoms in MSF-OCB MH clinics in Serbia and Greece, 2016**



Most of the symptoms observed by the MH professionals in both countries belong to categories of anxiety, depressive and adjustment disorders and acute reactions (Figure 5).

### 1.2.4. SEXUAL REPRODUCTIVE HEALTH (SRH) ACTIVITIES

In Greece both in Idomeni and Lesbos, MSF teams provided care for women, in a first phase in an integrated manner with the Out-Patient (OPD) consultations and in a vertical way in a second phase in order to increase quality of services, the different maternal health services provided are shown in Figure 6.

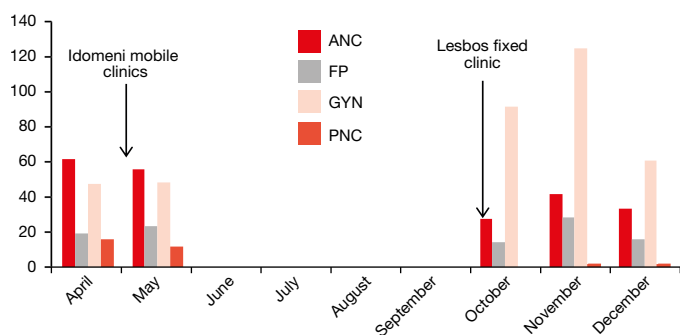
### 1.2.5. VACCINATION

In May 2016, after two months of negotiations with the Government in Greece, MSF

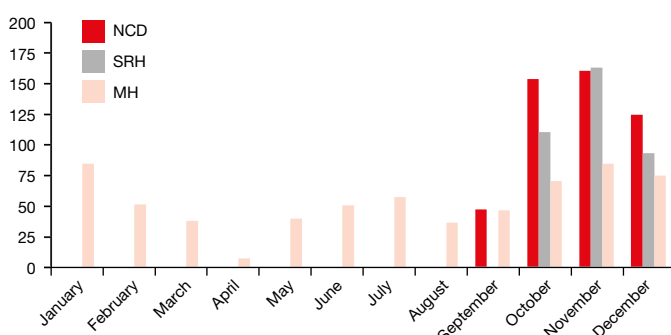
**Table 1: Total number of consultations in MSF-OCB MH clinics in Greece and Serbia, 2016**

	Number of assessments/ single sessions	Number of Follow Up sessions	Total number of MH sessions	Number of groups (number of participants)
<b>Greece</b>	Idomeni (closure end of May)	476	324	800
	Kos (closure end of April)	39	69	108
	Leros (closure end of March)	27	22	49
	Lesbos	421	345	766
<b>Serbia</b>	Presevo (closure in April)	67	36	103
	Sid (closure in April)	145	31	176
	Subotica (closure in November)	465	81	546
	Belgrade	706	137	843

**Figure 6: Total number of Ante-Natal Care (ANC), Post-Natal Care (PNC), Family Planning (FP) and gynaecological consultations in MSF-OCB SRH clinics in Greece, 2016**



**Figure 7: Total number of MH, CNCD and SRH consultations provided in MSF clinic in Lesbos, 2016**



implemented a multiantigen vaccination campaign, targeting the children living in Idomeni and in the nearby smaller make-shift camps. This activity took place just few days before the camp was evacuated by the authorities and people dispersed in several different locations, mostly in the outskirts of Thessaloniki. During the 5 days of the campaign a total of 3,031 children had been vaccinated. A total of 1,097 under 5 years old were immunized against diphtheria, tetanus, pertussis, Haemophilus influenzae, Hepatitis B poliomyelitis, pneumococcus, measles, mumps and rubella while 1,934 children aged from 5 to 15 years were immunised against measles, mumps and rubella.

During the vaccination campaign in the camp, Middle Upper Arm Circumference (MUAC) screening was conducted. A total of

1,158 children were screened and two cases of Moderate Acute Malnutrition (MAM) were identified. There were no cases of Severe Acute Malnutrition (SAM).

After three days of vaccination campaign, the teams continued with opportunistic vaccination in all locations the three MSF sections were running activities. MSF-OCB continued the vaccination in Lesbos Island immunizing 651 children (287 in Kara Tepe camp, 236 in Moria camp and 128 in other camps).

#### 1.2.6. FIXED CLINIC APPROACH

Although, 2016 started with a highly mobile approach, the fourth trimester of the year saw the conception of a more fixed strategy. A fixed clinic was opened in Lesbos to offer care for Chronic Non-Communicable Diseases (CNCD), SRH and MH at the end of

September (Figure 7). PHC was not offered anymore by MSF, since other health actors had, in the meantime, taken over PHC activities.

## 2. ITALY

### 2.1. CONTEXT

In 2016, 180,746 people have arrived on Italian shores<sup>1</sup>, with the majority of them (70%) disembarking in Sicilian ports. In one year 4,581 were reported dead in the attempt of sea crossing through the Central Mediterranean route.

Despite the number of arrivals being constant in the last years, the Italian reception system still operates in an emergency mode, presenting several inadequacies to respond to the needs of this specific vulnerable population. In addition to the asylum seekers hosted in reception structures, there is an increasing number of people in transit towards the northern borders of the country, attempting to reach other EU states.

Having this context in mind, MSF positioned strategically in the entry points with Search and Rescue (SAR) activities, Psychological First Aid (PFA) at disembarkation, mental health care in Trapani, along the transit in Rome with the clinic for torture victims and at the exit points in the north of the country at the frontiers with France and Switzerland.

### 2.2. SEARCH AND RESCUE ACTIVITIES (SAR)

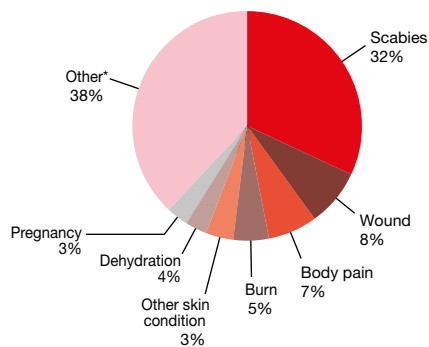
MSF has been carrying out SAR operations in the Central Mediterranean since May 2015. In 2016 operations were resumed in April and continued until November with three vessels, prepositioned in international waters north of Libya and actively searching for boats in dis-

**MSF EU Migration Activities, February 2016**



<sup>1</sup> <https://missingmigrants.iom.int/mediterranean>

**Figure 9: Most common morbidities in MSF-OCB SAR clinic, 2016**



\* Violence, diarrhoea, eye infections, fever, bronchitis, cold, cough, sore throat, pregnancy, headache

tress. In 2016, the Bourbon Argos, MSF OCB vessel, rescued a total of 10,415 persons.

After rescue, migrants have access to emergency care on board, OPD and SRH care as well as PFA. In 2016 more than 1,670 OPD consultations were carried out offshore (Figure 9). In addition to the more common morbidities, it is also important to highlight that almost 5% of the cases were of chemical burns. These result from the prolonged exposure of skin to a mixture of fuel and salt water since people have to sit for hours in overcrowded boats. The lower limbs and genital area of the persons sitting in the central part of the boat are more affected. One out of ten cases of chemical burns was severe to the extent that it required medical evacuation by helicopter or speed boat for referral to higher level of care. During OPD consultations and PFA activities, cases of violence including torture were identified. After providing care and issuing medical certifications these cases were handed over to other actors on-shore for follow-up after disembarkation.

### 2.2.1. PSYCHOLOGICAL FIRST AID

As of 2015 we have been providing PFA upon disembarkation to assist the survivors of traumatic events at sea. The team composed of a project coordinator, psychologists and specifically trained cultural mediators deployed within maximum 72 hours after the alert is given by the Italian Ministry of Interior. PFA activities are aimed at providing emotional support and responding to immediate needs of people after disembarkation. Most severe cases are referred to national medical facilities for follow-up. In 2016, the team intervened 31 times mainly in harbours in Sicily, but also in Calabria and Sardinia.

## 2.3 MENTAL HEALTH CARE

Asylum seekers often experience horrific situations in their home country or during the journey to Europe that can have an impact on their psychological wellbeing. These conditions are often worsened by the poor reception conditions in Italy, where they live for several months waiting for the review of their asylum application. Building on the experience of the Ragusa project that closed earlier in 2016, MSF decided to address this gap through collaboration with local health authorities to initiate a project of psychological assistance for asylum seekers in reception centres (CAS) in the Trapani province in April 2016.

The objectives were:

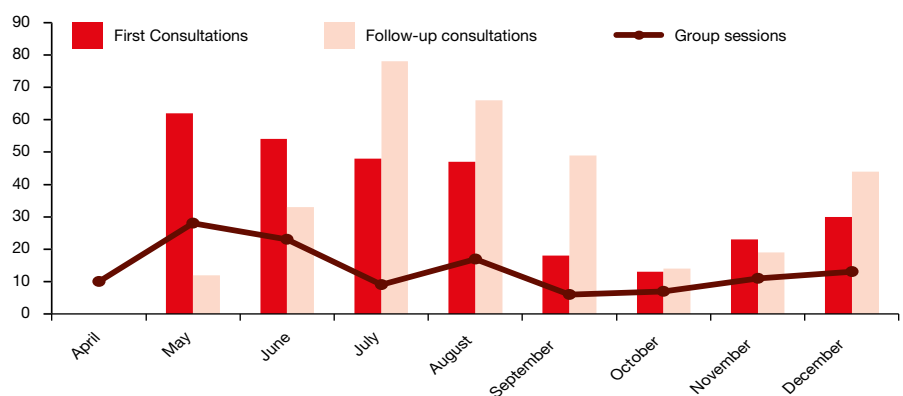
1. Provision of direct clinical care through:
  - Group psycho-education and group support sessions aiming to help migrants identify psychological effects related to past or to present experiences, support them to develop adequate coping mechanisms, but also prevent/reduce mental disorders and identify people who needed individual support.
  - Individual sessions that offered counselling/short term intervention for people who already developed psychological symptoms/distress.

2. Technical support/capacity building by reinforcing the capacity of the psychologist working in the CAS when possible by conducting the clinical care in pairs and providing technical training and clinical supervision. In the same way, MSF social workers provided guidance/training for the CAS social workers to increase their knowledge and competences regarding functioning of the reception system and the legal and administrative procedures.

Furthermore, in parallel, a transcultural psychotherapeutic service was initiated at end of the year, in order to provide specialized care to asylum seekers in need of longer term support. The underlying objective is also to train MH professionals from the public system (psychologists and psychiatrists), through joined sessions (on-job training), so that they are able to provide appropriate care to migrants afterwards.

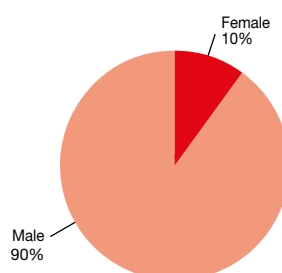
In eight months of activities the team assisted a total of 641 patients during 99 group sessions and completed 626 individual sessions in 16 CAS. Number of first, follow up and group sessions, as well as gender and nationality of patients is presented in Figure 10 and Figure 11.

**Figure 10: Number of first, follow up and group sessions in Trapani, April – December 2016**

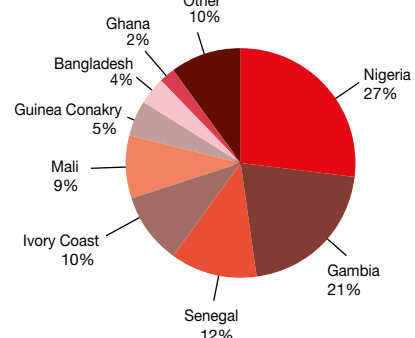


**Figure 11: MH individual consultations in Trapani, April - December 2016**

By gender



By nationality





## 2.4. CENTER FOR REHABILITATION OF VICTIMS OF TORTURE AND OTHER FORMS OF ILL-TREATMENT

The Centre for rehabilitation for victims of torture and other forms of ill-treatment, which was opened in October 2015 in Rome, continues to offer high quality interdisciplinary care for beneficiaries who come from more than 20 different countries. The team is composed of doctors, psychologists, physiotherapist, social workers, cultural mediators and legal advisor. Project activities are carried out in collaboration with an Italian organization Medici contro la tortura with years of experience on torture victims' rehabilitation and with

the Association for Law Studies on Migration, the experts of legal support for migrants and asylum seekers. At the end of the year the active cohort consisted of 62 beneficiaries.

## 2.5. MIGRANTS IN TRANSIT (NORTHERN BORDER)

Because of the urgent medical and psychological needs of migrants in transit at the northern borders of Italy, MSF has decided to intervene with basic psycho-medical assistance activities, food and non-food donations to respond to their acute needs. The project (Migrants on the Move) is carried out through the coordination with local authori-

ties and networks of local volunteers. The projects started in December with activities in Como at the frontier with Switzerland and in Ventimiglia at the border with France. In the latter, a team of cultural mediators and a midwife run a small clinic together with local volunteer doctors. Here, migrant women, children and families stop along the way towards the French border. In Como, MSF has started providing mental health support to migrants in transit in the city, within the local Red Cross camp (which hosted around 275 people) and at the San Martino in Rebbio parish.

## 3. LOOKING BACK AND AHEAD

- As explained above, the main challenge in 2016 has been the continuous context change and the subsequent need to readapt the interventions to reach the beneficiaries.
- From a strictly medical perspective we have been challenged by the difficulty to ensure continuity of care for an extremely mobile population. The impact of our medical activities was hard to measure as most of the activities are "single shot".
- In 2017 we aim to enrich the medical relevance of the activities and will support the projects to better monitor the impact.

# NUTRITION

## 1. OVERVIEW

In 2016, most of Médecins Sans Frontières Operational Centre Brussels (MSF-OCB) nutrition activities were integrated into regular projects (e.g. a number of beds in a paediatric service is dedicated to children with Severe Acute Malnutrition, SAM), while large vertical nutrition projects were closed down (e.g. in Niger and Madagascar).

The focus in 2016 was to provide quality care for SAM and severely malnourished children with complications. Thus, OCB today responds to complicated malnutrition in more countries than before. Such clinical capacity was developed, although sometimes on a small scale within projects like in prisons in Malawi or in the paediatric wards in Afghanistan.

Furthermore, OCB ensured that every child on a nutrition programme did not miss opportunities for vaccinations according to the new vaccination schedule. With regards to Human Immunodeficiency Virus (HIV) and Tuberculosis (TB) – which are important underlying diseases related to malnutrition –, screening, diagnostic and treatment tools have been introduced in the nutrition protocol and need to be put in practice by 2017.

Research on Kwashiorkor – in its final stage of preparation in 2016 – aims to identify the aetiology of such condition and to adapt the treatment plan for affected children. This is very important since severe Kwashiorkor in children still shows major adverse outcomes like higher mortality, risk of relapse and lower response to nutrition treatment.

Regarding food security and emergencies, the 2015 El Nino phenomenon brought drought and flash floods in several parts of East Africa, thereby increasing vulnerability especially for young children. OCB was alert for the necessary nutrition response in food insecure areas. Nonetheless, no “major” emergencies were reported in 2016 except in South Sudan where partner sections gave support. Close monitoring will remain on top of our priorities in areas hit by drought and facing security problems so as to intervene when necessary and possible.

In Maiduguri, Borno State, Nigeria, – an area facing a humanitarian crisis after long-lasting conflicts –, MSF Operational Centre Paris (OCP) teams found emergency levels of mortality among children under 5 years of age in unrecognized camps. At the end of the year, an OCB team re-joined OCP, Operational Centre Barcelona (OCBA) and Operational Centre Amsterdam (OCA) to scale up the existing response in this food insecure area.

Hospital care and trauma centres are becoming prominent in OCB. In such projects, we realise that hospital nutrition after major surgical procedures is a point of discussion and follow-up. Post-operative de-nutrition is being reported more and more in the field. Since August 2016, enteral nutrition started in two projects (i.e. HIV project in Kinshasa, Democratic Republic of Congo, DRC and Tabarre trauma centre in Haiti) and this activity is under evaluation for possible scale up.

## 2. PROGRAMME ACTIVITIES

### 2.1. PROGRAMME ACTIVITIES AT PROJECT AND MISSION LEVEL

Overall, in 2016 OCB supported 29,982 beneficiaries with its nutrition activities (preventive and treatment programmes) in 12<sup>1</sup>

countries (versus 9 in 2015). OCB nutrition support was gradually stopped in 3 countries (Niger, Madagascar and partly in South Sudan), while started to be provided in others (Nigeria, Haiti, Malawi, Mozambique and Lebanon). OCB nutrition interventions were conducted through vertical programmes

(or in emergencies), integrated into other medical activities or as targeted nutrition programmes (*Table 1 and 2*). The detailed programme data is presented in the Annex OCB therapeutic feeding programmes in 2016 by project.

<sup>1</sup> Excluding the programme in Maiduguri, Borno State, Nigeria. Official opening delayed. First admissions were foreseen in early 2017.

## 2.2. NUTRITIONAL EMERGENCIES

While one of the DRC emergency interventions became a regular project (Bili), the Pool d'Urgence Congo in DRC reacted to nutrition emergencies in two other settings. In Maniema, while responding to a measles outbreak, children were screened for malnutrition and treatment was provided to SAM cases. The other intervention targeted a high number of refugees arriving from South Sudan in Adi, Ituri (Bunia province) where one Intensive Therapeutic Feeding Centre (ITFC) and one Ambulatory Therapeutic Feeding Centre (ATFC) were opened in November 2016 and the project is still running. Beneficiaries are South-Sudanese refugees and the host community.

Following the hurricane that devastated Haiti in October 2016 (Department du Sud and Grande Anse), nutritional assessments were carried out following alerts of cases of severe malnutrition. However, the launched response did not include a specific nutrition component as no evidence was gathered during assessments. Surveillance on food security is still on-going in the area.

Together with other OCBs, OCB joined OCP to support and expand the existing nutrition

activities in Maiduguri, Borno, Nigeria. This intervention aimed to extensively respond to the alarming situation reported in August 2016. An OCB team left at the end of 2016 for the preparatory phase of the project. Response included one ITFC of 50 beds, one ATFC (including protection of families of patients) and deployment of a surveillance and active case finding team. The entrance and exit criteria have been simplified to "MUAC and oedema only" so as to allow a better coverage and flow of patients. Activities are foreseen to start at the beginning of 2017.

In March 2016, the Madagascar intervention in Androy and Anosy regions – which started as emergency in June 2015 – was closed. After providing training to the local Ministry of Health (MoH) staff, OCB handed over the last supported ITFC structure to local authorities. An exit survey showed acceptable malnutrition rates in the area and health authorities were recommended to continue surveillance on food security.

## 2.3. NUTRITION PROGRAMMES

In 2016, the number of nutrition support activities decreased except for ITFC (11 in 2015 versus 14 in 2016). This is due to the expansion

of the integration policy and the further emphasis on hospital care for the most severe cases.

For therapeutic feeding programmes in general i.e. ITFC, ATFC and Supplementary Feeding Centre (SFC), we observed a remarkable drop in the absolute numbers of beneficiaries, especially after leaving activities in Niger.

One Blanket Supplementary Feeding Programme (BSFP) was implemented in camps for Syrian refugees in Lebanon. In Kenya, we continued to provide care for HIV infected children in the MoH structures of Kibera slums.

### 2.3.1. THERAPEUTIC FEEDING PROGRAMMES

In 2016, 12,819 children were receiving therapeutic feeding and medical treatment for SAM. Out of SAM patients, 2,874 complicated cases required admission to an ITFC while others could be directly admitted at ATFC. ITFC aims at stabilising SAM patients before transfer to an ATFC, in order to complete therapeutic feeding and treatment as close as possible to their homes.

This happened in 14 nutrition projects in 12 countries. Whereas the volume of therapeutic feeding projects and activities is high, the number of beneficiaries decreased by 31% compared to 2015 (18,668). This was mainly due to the final handover of nutrition activities in Niger. In 2016 however, therapeutic feeding programme activities increased in the DRC, covering half of OCB beneficiaries.

In 2016, mortality indicators of therapeutic feeding projects were generally under control. However, mortality rates and cure rates are difficult to analyse in projects where OCB only supports ITFCs. The final outcome of these patients is not recorded and they are considered stabilised before being transferred to ATFC (e.g. in South Sudan, Pakistan, or in the final phases of support in Madagascar and Niger).

The handover of nutrition activities remaining in Niger was finalised in March 2016. The activities in Madagascar were also handed-over at the same time. The ITFC in Gogrial (South Sudan) was supported until May, when the project closed. On the contrary, MSF continues ITFC care in Pibor project (South Sudan), while the non-governmental organization Joint Aid Management took over ATFC support in 2016.

Table 1: OCB nutrition programmes in 2016

Type of programme	Countries and projects
<b>Vertical programmes / emergencies</b> <i>Nutrition is the main activity</i>	Democratic Republic of Congo (Adi, Ituri, Bunia); Madagascar (Grand Sud); Nigeria (Borno, Maiduguri)
<b>Integrated programmes</b> <i>Nutrition is integrated into existing medical activities</i>	Afghanistan (Kabul); Central African Republic (Ouango and Bangassou); Democratic Republic of Congo (Nord Kivu and Maniema); Kenya (Nairobi); Lebanon (Syrian refugees); Malawi (prisons and refugees of Mozambique); Mozambique (Manica); Mauritania (Hodh El Chargui); Pakistan (Bajaur); South Sudan (Gogrial, Pibor, Doro); Niger (Guidam Roundji)
<b>Targeted nutritional programmes</b> <i>Nutrition support is targeted to patients with specific nutritional needs (e.g. patients with human immunodeficiency virus, patients with obstetric fistula, pregnant and lactating women); or food protection rations are provided in food insecure areas</i>	Democratic Republic of Congo (Kinshasa); Kenya (Nairobi); Haiti (Tabarre); South Sudan (Doro); Lebanon (Syrian refugees)

Table 2: OCB nutrition activities in 2016

Type of activity	Number of centres	Number of beneficiaries
<b>ITFC</b>	14 (total) 12 (integrated paediatric or intensive care unit hospital services)	2,874
<b>ATFC</b>	43 (in 17 projects)	9,945
<b>SFC plus Selective Feeding (for PLW)</b>	2	803
<b>Specific targeted nutritional support</b>	2	14,590
<b>Family food ration</b>	1	1,770

ITFC: intensive therapeutic feeding centre; ATFC: ambulatory therapeutic feeding centre; HC: health centre; SFC: supplementary feeding centre; PLW: pregnant and lactating women.

### 3. TRAINING

The nutrition Unit is constantly looking for opportunities to train both national and expatriate staff on the different nutritional strategies and activities.

- Integrating modules on nutrition in existing trainings. For example, in 2016, modules were prepared for the reproductive health course (for midwives and gynecologists), the First Line Medical Training (FMLT, for supervisors of first line medical activities) and the health promotion training (for health promoters).
- The first sessions of the new FLMT in French (May) and English (October) received input from the nutrition Unit and related role play workshops were conducted. These had positive feedback and will be further expanded for the next trainings in March 2017.
- In 2016, no mono-thematic training on nutrition was conducted. The demand of the field is growing and the Unit tries to partly compensate for this by the briefing of the expats leaving on missions.
- E-learning for nutrition, which was first developed in 2011, needed revision to comply with the new international guidelines. The revision planned for 2015 was postponed in 2016 and is now coordinated by

MSF-OCA. E-learning is at the stage of being pilot tested on the new platform and final checks for content and language will be done.

- The nutrition advisors of the different MSF sections facilitated the Populations in Precarious Situations training (PSP) in September 2016. Positive feedback was received and preparations were made for a new nutrition case study in March 2017.
- External teaching was provided on demand at the Institute of Tropical Medicine in Antwerp (ITM) for the Post Graduate Certificate for Tropical Medicine and International Health. The sessions on the physio-pathology of nutrition and nutrition rehabilitation were well received. This demand for training serves also as an avenue for informal recruitment.

### 4. OPERATIONAL RESEARCH AND DEVELOPMENTS

#### 4.1. PUBLICATIONS

No studies were published in 2016.

#### 4.2. ON-GOING STUDIES

A research project on Kwashiorkor started through the collaboration with the ITM, Antwerp and Ghent University. The study aims to improve the understanding of the pathogenic

pathways underlying Kwashiorkor, which remains currently largely unexplained. The new omics-based technologies offer the opportunity to 'go back to the drawing board' and to explore the pathophysiology of Kwashiorkor in a completely new dimension, in a more broadly and specific aspect. The results of this study have the potential to open opportunities for developing innovative diagnostic tools, prevention strategies and treatment. In this project, the metabolites and biochemical profile of 60 children with Kwashiorkor, 60 children with marasmus and 40 non-malnourished controls will be compared.

This project was submitted and accepted by the MSF International Innovation Fund. The development of the protocol started in 2016 and made good progress thanks to the close support of Ghent University. Field implementation is planned for mid-2017.

#### 4.3. TOOLS AND GUIDELINES

The ITFC protocol has been revised and released. Specific changes included highlighting HIV and TB diagnosis, treatment and follow-up of malnourished children, and the new vaccination schedule. The new Ebola guideline includes nutrition recommendations for the treatment of Ebola infected patients.

### 5. LOOKING BACK AND AHEAD

## 5.1. LESSONS LEARNED IN 2016

- Adapting strategies to local contexts – The strategy of "surveillance caravans", combining rapid nutritional assessments and mobile clinics and used in Madagascar, has worked and was accepted by the population. Nonetheless, we realized that fixed nutrition activities should be set up in other settings to diminish the high default rates. The DRC experience revealed that ATFCs in mobile clinics are not suited for good nutritional follow-up of children.
- Capitalising human resources – By continuously diminishing nutrition activities, we are losing our internal human resource capacity to perform nutritional surveys and nutritional/food security evaluations but also to set up emergency nutritional activities and even to detect malnutrition in a regular projects. There is a large demand from expatriates for training on nutrition and malnutrition.
- Data monitoring – The patient recording system of ITFC hospital-integrated services is not suitable to specifically monitor malnourished patients, since data is captured in the global picture at hospital level. The Medical Information Network for Operational Support (MINOS) system for data collection integrates all required data in one tool, replacing the specific nutrition monitoring tools used before. Nutrition data collection and recording need to be improved, according to new data collection tools. Otherwise, nutrition outcomes will be poorly measured and analysed.



## 5.2. PROSPECTS FOR 2017

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### Operations

- Nutritional surveillance after the El Nino phenomenon needs to continue especially in conflict areas such as South Sudan, Somalia and the Ethiopia-Somalia border region. The challenge however lies in being more reactive and in developing strategies for an effective response especially in situations where access is limited for both populations and aid workers.
- The discussion on nutrition and malnutrition at hospital level – especially in paediatric wards – needs to be sustained through different patios and interdepartmental exchanges, so as to make progress in the correct management of severely malnourished children with complications. Projects like Masisi in the DRC should be more closely supported. Furthermore the opening of activities in Kenema and Goroma Mend in Sierra Leone and Juba, South Sudan projects require additional involvement of the Unit. Also, the case management of HIV- and TB-affected malnourished children need to find practical ways of delivery.
- As hospital-based projects grow, the focus will be put on improving hospital nutrition by:
  - Increasing the quality of integrated malnutrition detection and care in paediatric wards;
  - Adapting hospital nutrition strategies, such as balanced diets support in specific diets, and enteral feeding for inpatients.

### Guidelines and tools

- To revise the standard protocol for infants below six months of age.
- To prepare the breastfeeding toolkit and to disseminate and evaluate it within maternal and child health care services. This includes the introduction of the breast pump in two pilot projects (neonatology and in-patient nutrition).
- To evaluate the use of the enteral feeding nutrition protocols in the field.
- To follow-up with the necessary changes in MINOS (according to the nutrition monitoring tool). Since MINOS is being used in different projects, we need to find ways not to lose valuable information and indicators.
- To harmonise MSF protocols to those of other organisations working in nutrition, including United Nations Children's Fund (UNICEF) and other MSF operational centres. The MUAC bracelet is to be adapted from 4 to 3 colours. Also, the added value of using F100 therapeutic milk in the transition and the second phase of ITFC care is under discussion. UNICEF recommends to directly initiating Ready-to-Use Therapeutic Food (RUTF) from first the phase with F75 therapeutic milk.

### Trainings

- FLMT training: module 1 will be developed (formative supervision) and technical support given to modules 3 and 5, where nutrition is included. Participants are supervisors and future coordinators.
- Reproductive health in emergencies: a module on nutrition for pregnant and lactating woman will be developed and training given. Participants are mainly midwives and gynaecologists.
- Health promotion training: a module on nutrition and health promotion is to be developed. Participants are first-mission health promoters in the field with minimal experience (expatriates and national staff).
- Implementation of the new E-learning nutrition, to teach basics on nutrition activities and care to our junior staff.

### Operational research

- Practical implementation of the Kwashiorkor research project in Maradi (Niger, OCP project) in collaboration with Epicentre, ITM and Ghent University.

# OPERATIONAL RESEARCH AND DOCUMENTATION

## 1. OVERVIEW

The activities of 2016 were focused largely on: improving the modus-operandi to cope with the increased demand for operational research; conducting operational research; building sustainable research capacity and; making efforts towards moving research to policy.

In order to improve how we cope with growing demands for Operational Research (OR), we developed a three-year plan which articulates our aspirations and targets: an interactive model that fosters sharing of research portfolios and improved communication at stake-holder level and between team members. A balanced presence of team members in both Brussels and Luxembourg has also been ensured.

Publication outputs, a recognized scientific indicator of successful study completion and reporting, was high (126 publications) with diversification into 17 thematic areas. This reflects the adaptive nature of the team to operational dynamics. While emphasis on dissemination continued, there has been a growing recognition of the need to introduce metrics, resources and skills to evaluate the impact of operational research on policy and practice change.

The Structured Operational Research and Training Initiative (SORT IT) developed by Médecins Sans Frontières (MSF)-Luxembourg and partners in 2009, has been adopted by the World Health Organization (WHO) and under its leadership, has been scaled up to 85 countries. It is unique in that it brings together individuals of various backgrounds, fosters diversity of thinking and opens opportunities for networking and advocacy. SORT IT has evolved to embrace more complex methodology including mixed-methods and qualitative research as well as “on-line” learning. An operational research fellowship program, which stems from SORT IT, fosters sustainable leadership development (including PhDs) and is now recognized by WHO and several European universities.

## 2. OPERATIONAL RESEARCH ACTIVITIES

There are two units responsible for operational research in Operational Centre Brussels (OCB): the South African Medical Unit (SAMU) which is primarily responsible for research related to Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) and tuberculosis (TB), and LuxOR for other themes and capacity building. This section focuses on LuxOR.

### 2.1. ADDRESSING THE GROWING DEMAND FOR OPERATIONAL RESEARCH

As the added value of operational research becomes recognized in MSF, so too, does the demand. In order to cope, a number of steps were taken including: developing a three-year vision for operational research supported by MSF-Luxembourg and ratified by OCB; implementation of an interactive model that fosters anchorage, sharing of research portfolios and improved communication between team

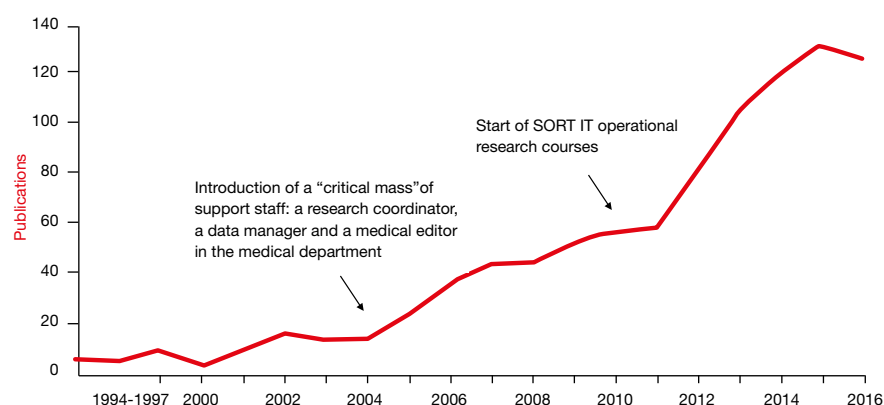
members; and ensuring that the available human resource pool for operational research is well balanced between Brussels and Luxembourg. One of the decentralized positions (previously based in South Africa) has been re-situated in Brussels.

Operational research and medical data support visits were conducted in various countries including Egypt, Serbia, Italy, Greece, Lebanon and Cambodia.

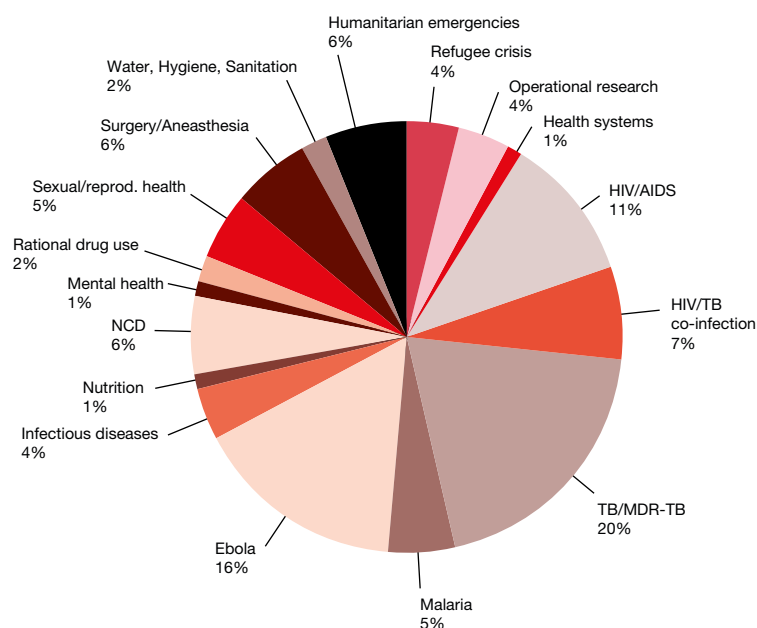
### 2.2. CONDUCTING AND PUBLISHING RESEARCH

Publications are a recognized scientific indicator of successful study completion and reporting. This continued to be high with 126 OCB-supported publications in 2016 (Figure 1). Types of articles included perspectives and viewpoints, original research and short reports (cf. § list of publications - in Annex).

Figure 1: Trend in yearly publications (1994-2016)



**Figure 2: Diversity of publications in 2016 (n=126)**



Publications covered 17 themes reflecting our medical activities and included Ebola, humanitarian emergencies and the refugee crisis (Figure 2). Areas remaining under-represented included nutrition, mental health, Water, Sanitation and Hygiene (WASH) and antibiotic-resistance.

## 2.3. DISSEMINATION OF OPERATIONAL RESEARCH

Dissemination of operational research was achieved through Operational Research (OR) Days conducted in Brussels, India (for South Asia) and Zimbabwe (for Africa). These Days continue to enhance the perceived value of research within MSF. Presentations from 2016 are available online at: <https://msf.lu/en/events/operational-research-day-2016> and through the MSF Field Research website. Other means of dissemination included LuxOR newsletters and summaries of recent publications. All OCB publications are now accessible on hand-held devices. A “MSF Kiosque Application” allows access using iPads, iPhones or Androids.

The MSF Field Research website ([www.fieldresearch.msf.org](http://www.fieldresearch.msf.org)) continued to archive MSF-authored publications from the entire MSF movement. Since 2010, there were over one million cumulative downloads around the world. This is encouraging as it shows global interest in research done by MSF and indirectly indicates that we are addressing important knowledge gaps.

## 2.4. SUSTAINABLE RESEARCH CAPACITY DEVELOPMENT (THE SORT-IT PROGRAM)

The Structured Operational Research and Training Initiative developed by MSF-Luxembourg and partners in 2009, has been adopted by WHO and under its leadership scaled-up globally. By December 31st 2016, a cumulative total of 467 participants completed SORT IT courses in 85 countries, demonstrating its reach. Of 33 completed courses attended by 375 participants, 339 (90%) completed all milestones with a total of 485 papers submitted to peer-review journals, of which 288 (75%) were in press or published by the end of 2016.

SORT IT is unique in that the research projects originate from the field, the course is output-oriented and it includes both MSF and non-MSF participants. Diversity of thinking is encouraged and the initiative has added value for building partnerships, networking and advocacy.

In 2016, key SORT IT achievements included: decentralisation to the country level (India, Kenya and Pakistan); thematic courses focused on Ebola and health systems in Liberia and Sierra Leone, malaria elimination in Southern Africa and Asia; use of qualitative research methods; creation of distance learning modules; and crossing the English Language publication barrier through publications in multiple languages including Russian, Spanish and Portuguese. The SORT IT teaching materials are now available in an open-access manner through YouTube:

(<https://www.youtube.com/channel/UC9Z-RuVhbrxJm5xAjUHwo6Hw/featured/>)

SORT IT participants also benefit from the Tropical-Education Network for continuing education including contributing towards a Masters in Public Health (MPH) and/or PhD opportunities from several European universities (e.g. Universities of Bergen, Nijmegen and Amsterdam).

## 2.5. ASSESSING THE INFLUENCE OF OPERATIONAL RESEARCH ON POLICY AND PRACTICE

With the increasing trend of publication outputs, there is also growing recognition of the need to introduce resources and skills to evaluate the impact of research on policy and practice change. In reality, resource investment by MSF is largely dedicated “upstream”, for generating evidence - until the publication milestone. There has been little or no “downstream” investment beyond the publication milestone, which makes assessment of policy and practice change a challenge.

With a view to changing this paradigm, a number of steps have been taken. They include a) introduction of a post of policy and practice advisor in LuxOR; b) linkage with the Manson Unit in London to introduce metrics with a Research Impact Monitoring Tool (REMIT); and c) linkage with The Union, Vital Strategies USA and other stake holders to introduce a dedicated and “stand-alone” module on how to write policy briefs and foster policy and practice change.

However, SORT IT courses have a built-in system to assess policy and practice change. In the last assessment (publication 4 in the publications list) involving 81 published papers, 45 (55%) contributed to self-reported changes in policy and/or practice. This included modifications of monitoring and evaluation tools, redrafting national guidelines, and scaling up existing policies.

## 2.6. LEADERSHIP THROUGH OPERATIONAL RESEARCH FELLOWSHIPS

An Operational Research Fellowship Program was initiated by LuxOR in 2011 and by the end of 2016 it included nine fellows. This is a pioneering initiative within MSF for boosting on-the-job research skills, fostering institutional human resource retention, and improving leadership and career opportunities in MSF. A fellow's role is to strongly support development of “innovative approaches and

ideas” within routine operations and support field implementation of OR.

Since 2011, the cumulative outputs of the nine fellows included over 500 research projects which shows the added value of fellows in driving the MSF research agenda.

## 2.7. PROMOTING THE COLLECTION AND USE OF MEDICAL DATA

Extra support was given to medical data systems for the subjects of torture, sexual vio-

lence, mental health, migrants and hospital care, and the development of the EpiData software with colleagues from The TB Union continued. Validation of epidemiologist profiles and closer collaboration with the epi pool is also on course.

## 3. OTHER ACTIVITIES

Fund raising activities were initiated and targeted foundations and philanthropic groups in Luxembourg. The financial yield has been

very encouraging. 2016 also marked the 30th birthday of MSF Luxembourg and various activities were undertaken by the team to highlight its role in operational research. LuxOR has also been nominated to the highest advisory groups on operational research including at the World Health Organization. This allows us to influence international guidelines and perspectives on global health.

## 4. LOOKING BACK AND AHEAD

# 4.1. LESSONS LEARNED AND CHALLENGES IN 2016

- One of the main challenges was the long time gap in replacing the post of the program officer for operational research. This affected the anchorage of operational research and particularly optimal sharing of research portfolios between Brussels and Luxembourg. An additional challenge was the shortage of human resources to cope with the unexpected and heavy workload in Brussels. The program officer has now been replaced and a new model of interaction has been put in place to avoid a déjà vu.
- A policy and practice advisor was employed but the candidate was unsuited for work in MSF. The post is again open and we hope to catch up with the plans in 2017.
- Although MSF aims for 100% “open access” publications, the cost of doing so amounted to over 150,000 Euros in 2016. Possible actions to reduce this expenditure include: requesting partial waivers; seeking additional funding and relegating non-priority publications to “delayed open access” or “closed access” publications until a more sustainable solution is found.

# 4.2. PROSPECTS FOR 2017

These will follow the main lines outlined in the LuxOR Vision document (2017-2019). In summary:

- Building on the gains made in 2016 including better planning, organization and communications between team members in various parts of the world, so too optimal utilisation of existing expertise. In this regard, the role of the program officer in building a cohesive team approach is vital. A pool of competent human resources will also be built to facilitate “gap filling” when needed.
- While continuing to conduct research, LuxOR will improve its focus on moving research into policy and practice. This will be done by introducing metrics, resources and skills needed to measure and foster translation of generated evidence into policy and practice. A dedicated person will be recruited, collaboration with other stake-holders (Vital Strategies, The TB Union, WHO, and EvipNet) will be enhanced to maximize synergies and The Research Impact Monitoring Tool (REMIT) will be introduced in the OCB. We will also explore the possibility of SORT IT embracing this in terms of capacity building.
- Ways for promoting the collection and use of medical data and sustaining an epidemiology and operational research support pool, including research alumni will also be explored.
- Where possible, we will collaborate with other MSF units and international partners to maximize synergies in operational research, capacity building, advocacy and funding.
- Finally, we will continue efforts to activate the Luxembourg MSF Foundation to serve as a complimentary structure to boost sustainable capacity building, networking and humanitarian reflection based on evidence from operational research.



# PAEDIATRIC CARE

## 1. OVERVIEW

Paediatric care concerns the care of children from birth through adolescence. Given their specific vulnerability, children under five have traditionally been prioritized in the majority of Médecins Sans Frontières (MSF) projects. However, many paediatric programmes extend paediatric care to children under 15 years. For the first time this year, data on children 5 to 14 years admitted for in-patient care was included in this report.

A large volume of paediatric activities takes place outside the hospital, warranting a closer look at the care provided to children at out-patient (community and health centre) level.

At hospital level, there is an urgent need to tackle processes that impact safety, effectiveness and patient-centeredness of the care provided.

## 2. PROGRAMME ACTIVITIES

### 2.1 UNDER-FIVE CARE

#### 2.1.1. UNDER-FIVE OUT-PATIENT CARE

In 2016, 477,009 under-five out-patient consultations, excluding Ambulatory Therapeutic Feeding Centres (ATFC), Emergency room and Ante-Natal Care (ANC), were conducted in 30 Operational Centre Brussels' (OCB) projects or interventions in 16 countries, a 6% decrease compared to 2015. The Guidan Roumdji project in Niger, which accounted for a large proportion of out-patient activities for the under-fives in previous years was handed over the Ministry of Health (MoH) in April 2016.

Among the projects in which morbidity data were available through Medical Information Network for Operational Support (MINOS) or other databases, there were 340,795 under-five Out-Patient consultations (OPD). OPD morbidity data were not included for the following countries and projects: Haiti, Turkey, Burundi, Malawi, Niger, and the Internally Displaced People (IDP)-Bangui and SIDA-Kinshasa projects.

The morbidity pattern for children under five was similar to previous years: Respiratory Tract Infections (RTI) represented 42% of under-five morbidity, followed by confirmed malaria (19%), non-bloody diarrhoea (15%), infectious skin diseases (5%), eye infections (3%), intestinal parasitosis (3%), and fever without identified cause (1.5%) (Figure 1). Slightly over one-third of all RTI were clas-

sified as lower RTI and 9% were not classified as lower or upper RTI, underlining gaps in reporting and/or the difficulties clinicians have in making this differentiation. Therefore, diagnostic innovations would be beneficial and clinical supervision of staff should also be strengthened.

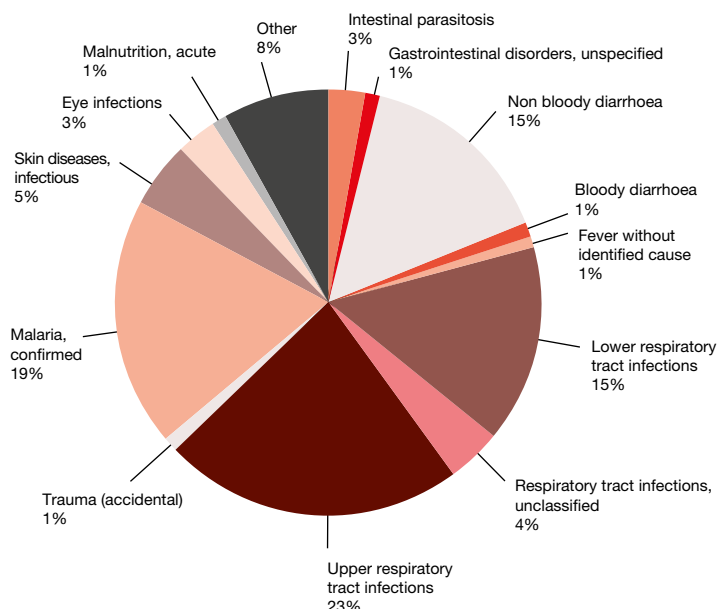
Only 94 suspected and confirmed Tuberculosis (TB) cases were reported, attributing only to 0.03% of diagnoses at OPD level. These extremely low numbers show a very significant gap in detection of TB at out-patient level, as reported in prior years. Implementation of a symptom-based TB screening questionnaire needs to be systematized at health center level, particularly in ATFCs. Data reported doesn't include all

vertical TB/HIV projects (cf. HIV/TB/Hepatitis C section).

A total of 586 (0.2%) consultations were done for vaccine-preventable diseases, of which measles, mumps, chickenpox, pertussis, and suspected cholera were, in descending order, the most frequently reported. An additional 140 cases of acute flaccid paralysis were reported, 91% of which were in the Blue Nile State. However, the accuracy of the diagnosis of such high numbers of acute flaccid paralysis cases is uncertain.

There were 359 (0.1%) Chronic Non-Communicable Disease (CNCD) cases reported, of which asthma (53%), cardiovascular disease (17%), thalassemia (14%) (in Sha-

Figure 1: Disease profile in children < 5 years in OCB out-patient departments, 2016



tila, Lebanon), epilepsy (13%), and diabetes (3%). The diagnosis of cardiovascular diseases needs to be clarified.

Integrated case management activities focusing on the main childhood killers were implemented at health center/health post level in the Blue Nile State.

Capitalization on the prior Integrated Community Case Management (ICCM) intervention in Pibor, South Sudan, or on the short-term intervention targeting treatment of malaria, lower respiratory tract infections and diarrhoea in under-fives in Kenema district, Sierra Leone, was not conducted.

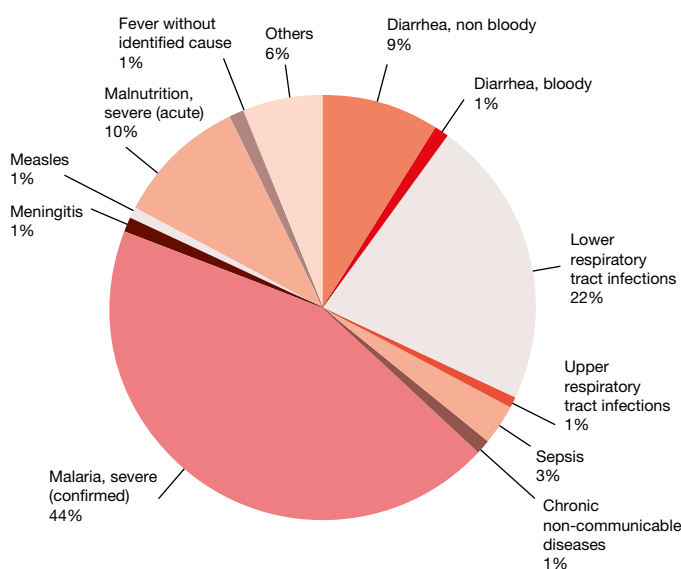
### 2.1.2. IN-PATIENT CARE FOR CHILDREN 1-59 MONTHS

In 2016, 19,759 children 1-59 months were admitted to the in-patient services (excluding In-patient Therapeutic Feeding Centres (ITFC)), in 15 OCB projects in 9 countries, representing a 33% decrease in admissions compared to 2015. The plan to open a paediatric hospital (Simbi) in Port-au-Prince, Haiti was abandoned due to in-country political reasons.

Detailed data for the paediatric in-patient wards were aggregated for all projects using MINOS (cf. Health Informatics section). A total of 13,141 children 1-59 months exited from these projects. Data for severely malnourished children admitted to ITFC are reported elsewhere (cf. Nutrition section).

Severe malaria (44%), Lower Respiratory Tract Infections (LRTI) (22%), Severe Acute Malnutrition (SAM) (10%) and non-bloody diarrhoea (9%) were the leading exit diagnoses from OCB hospitals (Figure 2).

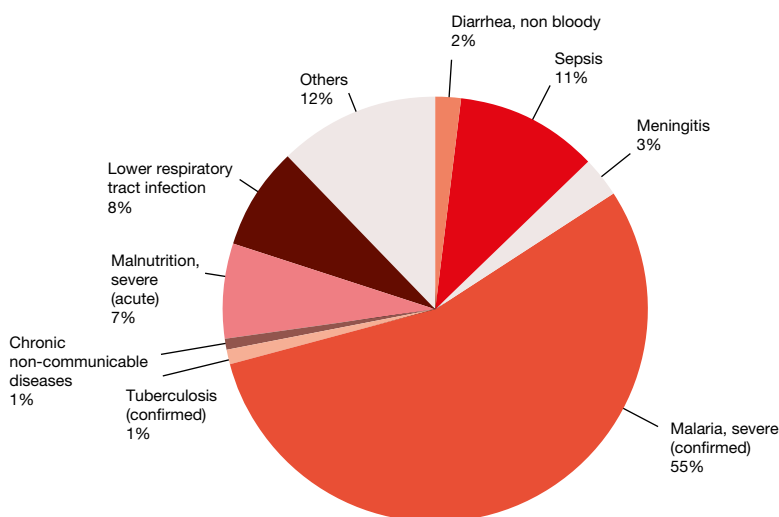
**Figure 2: Main exit pathologies in children 1-59 months in OCB, in-patient departments, 2016**



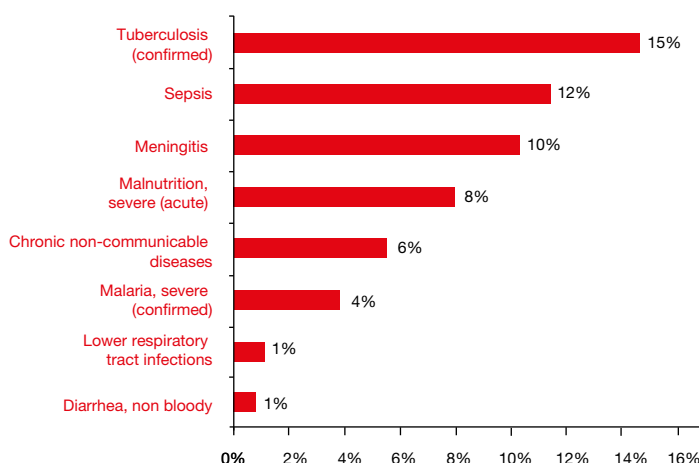
In these projects, there were 408 deaths of children 1-59 months of age. The in-patient mortality rate of children 1-59 months was 3.1%, while referral and lost to follow-up rates were less than 1%. However, there were inconsistencies in data entry in MINOS, casting some doubt on the accuracy of these figures. Overall In-Patient Department (IPD) mortality, referral and lost to follow-up figures could not be reported as these were not collected in the typology.

The most prevalent causes of hospital mortality for children 1-59 months were severe malaria (55%), sepsis (11%), LRTI (8%), SAM (7%), meningitis (3%), TB (1%) and non-communicable chronic diseases (1%) (Figure 3). Case fatality rates for these top contributors to hospital mortality are reported in Figure 4.

**Figure 3: Main causes of mortality in children 1-59 months in OCB in-patient departments, 2016**

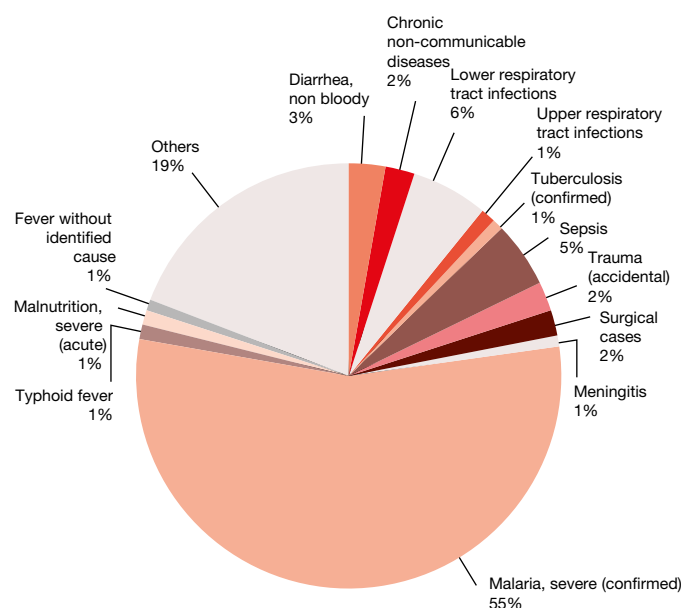


**Figure 4: Case fatality rates for children 1-59 months in OCB in-patient departments, 2016**



<sup>1</sup> Wiens, Matthew O., et al. "Pediatric post-discharge mortality in resource poor countries: a systematic review." PLoS One 8.6 (2013): e66698.

**Figure 5: Main exit pathologies in children 5-14 years in OCB, In-patient departments, 2016**



Severe acute malnutrition contributed to 7% of the in-patient deaths, with a case fatality rate of 8%. This might be an underestimation since data collection did not accurately capture all children with SAM who died in the intensive or high care areas of paediatric wards. A focus on critical care pathways, Infection Prevention and Control (IPC) and nursing care, diagnosis and treatment of specific morbidities (including TB) and a better understanding of the aetiology of Kwashiorkor are essential to help reduce this high mortality.

The in-patient case fatality rate from TB was very high, at 15%. Taking into consideration that only 35 cases of TB were diagnosed in IPD in 2016 shows that paediatric TB is underdiagnosed and undertreated in OCB programmes. Greater attention to early diagnosis and treatment of children with TB

(using existing clinical algorithms) is urgently needed, especially in children with SAM. Early response to therapy can be monitored by following simple clinical parameters (such as weight). Integration of TB into existing paediatric Pprograms should be considered especially where significant gaps in National TB programs exist to ensure that children receive a full treatment course for TB.

Post-discharge mortality rates would deserve a closer look since post-discharge mortality (often at home) is a significant, although generally unrecognized problem in low resource settings, especially in the first several months post discharge<sup>1</sup>.

Beyond data for mortality and other standard indicators, little or no data is available on issues related to patient safety (such as drug and fluid preparation, calculation and

administration errors; nosocomial infections; rational antibiotic prescription; etc.).

## 2.1.3. IN-PATIENT CARE FOR CHILDREN 5 TO 14 YEARS

For the first time, data on in-patient care for children 5 to 14 years is included in the report. Six OCB projects reported data separately for children 5 to 14 years in MINOS. There were 2,091 exits, and 36 deaths of the 5 to 14 years old children, accounting for 16% (range 6-26%) of in-patient paediatric (1month-<15 years) exits and 14% of paediatric deaths in these projects.

Severe malaria remained the top morbidity in this age group, accounting for 55% of all exit diagnoses. Other morbidities varied compared to the 1-59 months age group, (Figure 5).

The main causes of death were severe malaria (39%), sepsis (19%), SAM (8%), LRTI (6%) and TB (6%). In 17% of cases, the cause of death was in the category "other" and remained unattributed to a specific diagnosis. This warrants further analysis so that approaches can be targeted to these causes of mortality (Figure 6).

## 2.2. NEONATAL CARE

### 2.2.1. NEONATAL IN-PATIENT CARE

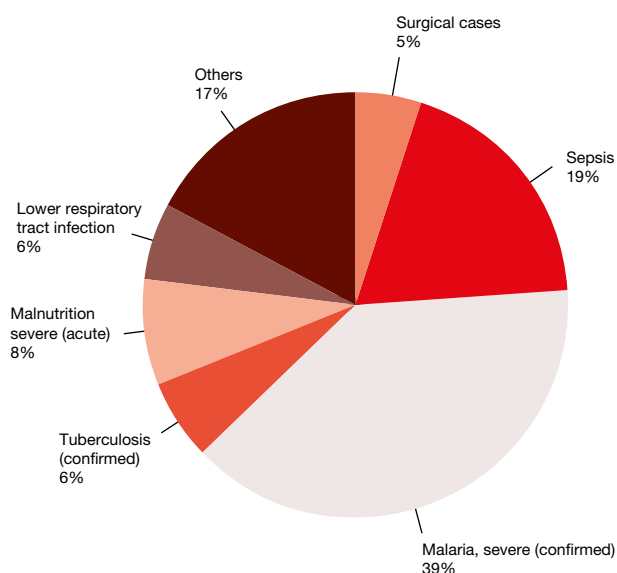
Data was analysed for the projects using MINOS, or the individual neonatal database (cf. Health Informatics section). Five OCB structures used the individual databases: Khost and Ahmad Shah Baba in Afghanistan, Castors (from May 2016), Bangassou in Central African Republic (CAR) and Timergara in Pakistan.

In 2016, there were 7,272 exits from OCB-run in-patient neonatal services and 953 neonatal deaths, in 10 projects in 6 countries. The volume of in-patient neonatal activities has been increasing year by year, nearly doubling since 2013. The number of exits from the neonatology service in Khost-Afghanistan has more than tripled between 2013 and 2016.

Average in-patient neonatal mortality rate was 13%, referral rate of 6% and loss to follow-up rate of 5%, though there was quite some variability across projects.

Major contributors to in-patient neonatal mortality were prematurity/low birth weight (47%), followed by intrapartum related events such as perinatal asphyxia (26%), and

**Figure 6: Main causes of mortality in children 5-14 years in OCB in-patient departments, 2016**

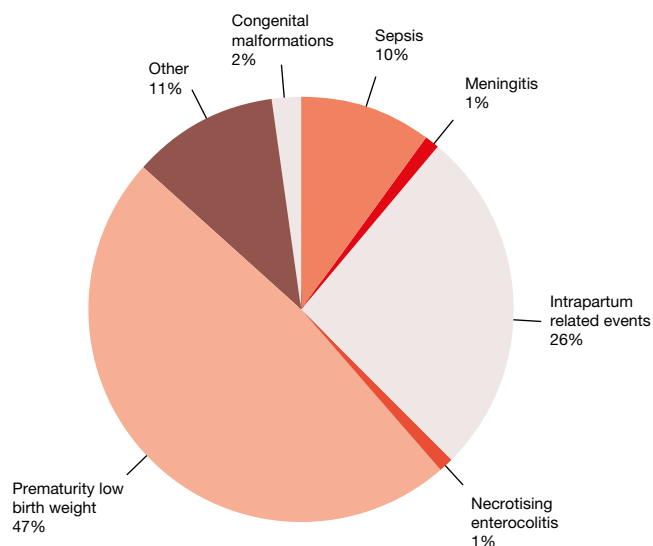


neonatal sepsis (10%) (Figure 7).

Twenty nine percent of deaths occurred in the first 24 hours of life, 40% of which were among babies above 2,500 grams born inside the OCB structure. There is a need to ensure that proven preventive interventions (e.g. maternal intravenous antibiotics in case of risk factors for neonatal sepsis, and maternal antenatal corticosteroids for preterm premature rupture of membranes) are fully implemented in OCB maternities. Moreover, all first-line providers need to be skilled in basic new born resuscitation, and trained in early recognition and management of hypoglycaemia, hypothermia and infection.

Outcomes were stratified by birth weight through aggregated data from projects that implemented the individual neonatal databases, accounting for 5,181 exits from in-patient neonatal services (Figure 8). Neonates with a birth weight <1,000g (n=90) and those with a birth weight between 1,000-1,499g (n=381) accounted for 2% and 7% of exits from in-patient neonatal services respectively. The defaulter rate (14%) was very high

**Figure 7: Main causes of mortality in neonates in OCB in-patient departments, 2015**



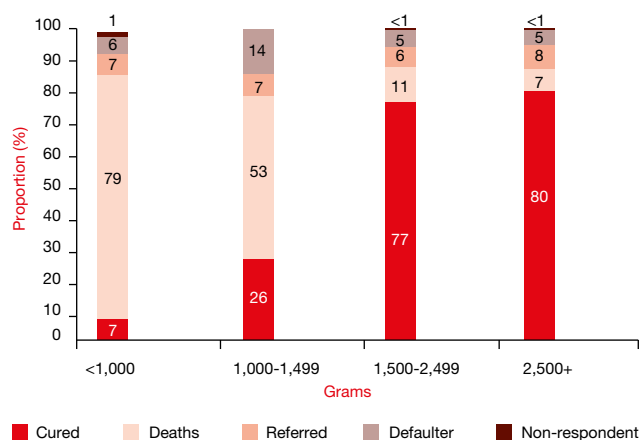
in neonates with a birth weight below 1,500 grams. Non-response to treatment was not systematically reported. A closer look at the proportion of neonates discharged cured and those discharged with poor response to treatment is warranted, so that appropriate models of palliative care can be developed.

Improved diagnostics, such as for neonatal sepsis, intrapartum related events, or congenital syphilis infection, could also lead to improved outcomes for neonates by helping rationalize treatment choices, limiting invasive care, and decreasing the demand for neonatology beds.

## 2.3. OPERATIONAL RESEARCH

To analyze OCB medical activities in specialized neonatal care units, operational research was conducted on patient data from 2012 to 2015 was collected in eight neonatology departments in seven countries. The study underlined the feasibility of a model of care which emphasizes prevention, early detection and treatment of hypothermia, hypoglycemia and infection, as well as adequate nutrition and fluid management. These interventions are proven to have a high impact on neonatal morbidity and mortality.

**Figure 8: Neonatal in-patient outcomes stratified by birth weight (g) in OCB In-patient departments, 2016**



## 3. LOOKING BACK AND AHEAD

### 3.1. LESSONS LEARNED IN 2016

- A large volume of paediatric activities take place outside the hospital. Capitalization on these activities (e.g. integrated community case management activities) should be done to learn from prior experiences. Moreover, clinical supervision of children at community and health centre level may not receive sufficient attention in some programmes.
- Investment in improved diagnostic skills and diagnostic capabilities (including access to haemoculture in some projects) has the potential to significantly improve care and outcomes for neonatal and paediatric beneficiaries.
- Some neonatal and paediatric wards are stretched to their maximum capacity. This demands a focus on processes to improve the safety and effectiveness of the in-patient care delivered to children in OCB programmes.
- Paediatric TB is underdiagnosed and undertreated in MSF programmes. This needs urgent attention if excess mortality especially for acutely malnourished children is to be addressed.



## 3.2. PROSPECTS FOR 2017

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- Two big paediatric projects are anticipated. The strategy and medical specifications for the maternal and paediatric hospital project in Kenema, Sierra Leone will be defined. A paediatric hospital project in Juba, South Sudan, will be considered based on the outcome of a paediatric assessment.
- Opening of a new maternal-neonatal project in Mauritania, aiming to develop a decentralized model of maternal-neonatal care.
- Continued focus on improving the link between maternal and neonatal care.
- Work on processes to improve paediatric hospital care and further decrease morbidity and mortality.
- Paediatric nursing care will receive a greater focus, in order to improve quality of care and 'do no harm' principle.
- Review data collection for paediatrics (main morbidities, case definitions, indicators)- a priority will be given to improvement of data collection for SAM children (cf. nutrition section).
- Operational research (anticipated):
  - Participation in an Epicentre/OCP-led multi-centric study examining shorter antibiotic treatment courses for neonatal sepsis;
  - Study on early-response to treatment for children with TB diagnosed clinically;
  - Kwashiorkor study (cf. nutrition section);
- Participation in interdisciplinary platforms such as antimicrobial resistance, telemedicine, adolescent care, pain and palliative care.
- Use of Paediatric Simulation in trainings to be developed.

# PHARMACY

## 1. OVERVIEW

The emergencies in Syria, Democratic republic of Congo (DRC) and Central African Republic (CAR) including increased Médecins Sans Frontières (MSF) activity in countries with constraints of importing drugs and material such as South Africa, Kenya, Ukraine, Pakistan, India, Lebanon and Syria (via Turkey), continued to represent significant challenges to the medical supply chain, compounded by the complexity of the global pharmaceutical market. Support to the medical and supply teams on quality monitoring, Rational Mmedical Pprocurement and data quality continued improving in 2016.

In the framework of the end-to-end approach, the three years' assessment and implementation pilot phase of the Good Distribution Practice (GDP) project has been finalized. The majority of the projects and concerned human resources have nowadays awareness of the latest GDP requirements and their impact on the quality of the therapies provided to the beneficiaries. GDP is currently a daily field reality which can count on a solid Head Quarter's (HQ) second line support. On demand, support has been also given for emergency interventions requiring a complicated pharmaceutical setup.

The year 2016 was marked by the implementation of the harmonized article codification rules adopted by all of MSF, embodied by UniData (MSF's central supply article database), having impacted the organization of pharmacies and medical stocks.

The medical stock integration implementation progressed slower than planned and the objective to integrate 100% of existing medical stocks under the supply department by the end of 2016 was not achieved. Getting Key Performance Indicators (KPI) for medical stocks over all missions remained an issue and consequently a global compilation of the indicators could not be conducted.

By the end of 2016, the first Good Pharmacy Practice (GPP) policy for Operational Centre Brussels (OCB) end-user pharmacies is in the final process of being finalized. The GPP aim can be defined as "efficient, safe, rational and cost-effective use of medicines" as well as "helping patients to make the best use of their medicines". In order to support this practice, it is essential that there is an established framework of quality standards and guidelines across the broad areas of Medicine Selection, 'last mile' Distribution and Storage, Good Dispensing & Safe Medication Practices and Training & Support.

## 2. THE MSF QUALITY ASSURANCE SCHEME

### 2.1. UPDATES OF THE MSF MEDICAL LIST

Each year, the typology of procured medicines which overlaps and is published in tandem with the standardized protocols of the Clinical Guideline, is updated according to

new protocols, specific field needs and the WHO Essential Medicines List (EML).

In April 2016, trivalent Oral Polio Vaccine (tOPV) was globally replaced by bivalent Oral Polio Vaccine (bOPV) to secure a lasting polio-free world. Other key new inclusions and replacements in 2016 include paediatric presentations of some antimicrobial medicines and enteral ready to use liquid nutri-

tion that can be used for complete feeding or supplemental nutrition support for adults and children. New injection material contributing to safer medication practices, such as a dispensing pin providing needleless vented access to medication vials for injecting and withdrawing cytotoxic drugs, was also included as well as training material for medical procedures such as hand hygiene and surface hygiene.

### 2.2. IDENTIFICATION AND VALIDATION OF DRUG SOURCES

Eleven products were validated by MSF pharmacists in 2016 (Table 1). In addition, three exceptional validations were approved by the Medical Directors: SOFOSBUVIR 400mg tabs and 2 for PYRIDOXINE 10mg tab. Five exceptional validations were extended in 2016.

Table 1: Number of drug dossiers approved (2010-2016)

Validation route	Drug dossiers approved						
	2010	2011	2012	2013	2014	2015	2016
MSF full product assessment	25	20	15	11	14	9	11
WHO pre-qualification	35	35	48	62	53	35	41
Medical Director Waiver*	0	6	2	4	1	1	3

\* Exceptional approval based on risk/ benefit analysis. WHO: TWorld Health Organisation

## 2.3. ALERTS ON QUALITY AND THE AWAKENING VOICE OF LOCAL MARKETS

With the increasing presence of mission pharmacists in OCB missions, the reporting of quality problems of internationally and locally procured medical items continued to increase (Tables 2 and 3).

Considering the weaker regulations applied to pharmaceutical production and distribution in resource-poor settings, quality monitoring/pharmacovigilance procedures must be enforced at all levels of the medicine's life cycle, particularly in countries that lack post-marketing surveillance systems. Improvement has continued due to the wider presence of pharmacists in MSF missions.

## 3. MEDICAL PROCUREMENT

### 3.1. ENFORCEMENT OF LEGISLATION INCREASES PROCUREMENT WORKLOADS

During 2016, evaluations of the local pharmaceutical markets were conducted in 18 countries. Approval outcomes are described in Table 4. These pharmaceutical market evaluations reflect the need for local medicine procurement in countries where MSF cannot import or faces importation constraints, other than an overall improvement of the pharmaceutical market. Reporting on local procurement continued to improve although it still remains underreported in some countries. The risk/benefit evaluation of local procurement and final approval too often rely on scarce evidence and information.

In 2016, 19 out of 32 missions dealt with challenging medical procurement systems. Of these ten relied on the local market for their medical procurement, six received part of their medicines from the public distribution flow while the remaining three faced difficult importation regulations, leading to sporadic local purchases (Figure 1, page 72). In coun-

**Table 2: Number of quality related communications issued by MSF Supply (2011-2016)**

Quality related communications	Number of communications					
	2011	2012	2013	2014	2015	2016
Quality alert	4	7	3	4	5	6
Batch recall	3	2	3	2	3	3
<b>Total</b>	<b>7</b>	<b>9</b>	<b>6</b>	<b>6</b>	<b>8</b>	<b>9</b>

**Table 3: Quality related problems reported by 5 Operational Centres (2013-2016)**

Year	Total number of quality problems reported	International Procurement source	Local Procurement source
2013	27	20	7
2014	15	11	4
2015	18	14	4
2016	19	18	1

tries where local purchase was unavoidable, the unreliability of the local pharmaceutical market complicated the supply and led to a heavy workload. This situation was compounded by the fact that enforcement of the quality of medicines on local markets is typically outpaced by the regulations enforced by the National Drug Regulatory Authority (NDRA) in medical humanitarian organisations such as MSF. Thus, there is an increasing proportion of medicines purchased from local markets for which MSF cannot guarantee the quality to the same level as the ones from the European procurement centres. The quality of medicines cannot be assessed at the product level in the field and therefore securing the supply chain through international procurement will remain the priority. Additionally, MSF continued to enforce its medical accountability for local purchases through:

- Improved centralisation of information on local purchases
- Enhanced intersectional collaboration on local procurement through mutual procurement activities and an increased number of intersectional pharmacy positions (e.g. Pa-

kistan, India, East Africa, Middle East and Northern African region and region)

- Developing methods for easier local procurement with higher quality assurance such as better practices of visual inspection at reception and quality monitoring along the medicine shelf-life
- Integrated pharmacovigilance practices as a standard activity in each project
- Increased capacity both to negotiate with NDRA's and to track the local regulatory environment through country pharmacists (cf. § 3.3).

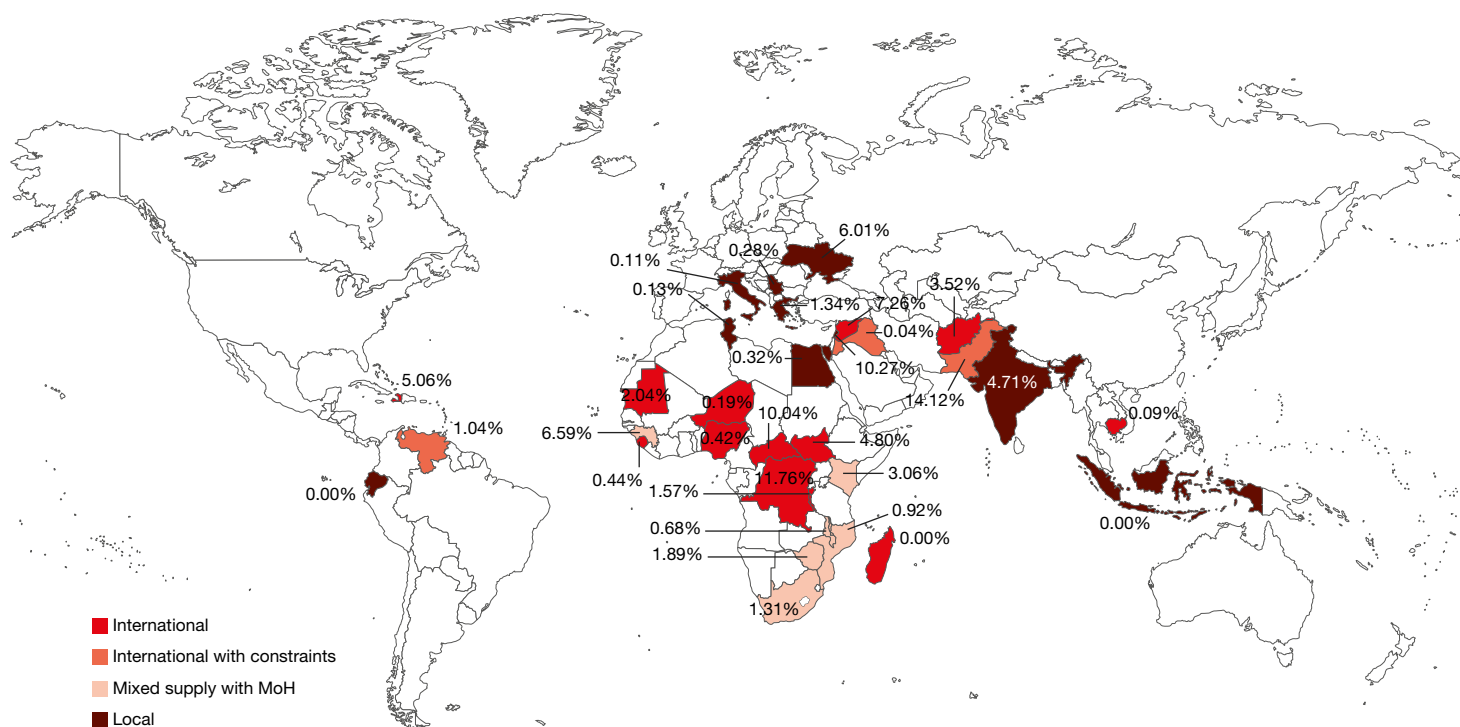
In 2016, 27 out of 32 missions purchased medicines locally. Of these two missions were in highly regulated countries (European migrations and Italy), six missions (Lebanon, Egypt, India, Kenya, Turkey and Ukraine) had a database implemented, ten missions submitted validation forms to approve the local purchases (Afghanistan, Burundi, CAR, DRC, Haiti, Kurdistan-Iraq, Malawi, Mozambique, Pakistan and Venezuela) and nine missions purchased locally without any recommendation regarding quality (Cambodia, Ecuador, Indonesia, Niger, Serbia, Sierra Leone, South Africa, Tunisia and Zimbabwe). The validation forms to approve local purchases and donations are available at mission level and were used by most missions. Linked to this, the Standard Operational Procedure (SOP) for Local Purchase and Donation are also available to all missions.

### 3.2. MSF EXPENDITURE

The total medical expenditure for OCB for medicines, vaccines, small medical supplies, medical equipment and kits in 2016

**Table 4: Evaluation of local pharmaceutical market (2010-2016)**

Year	Number of manufacturers approved	Number of wholesalers approved	Number of countries evaluated
2010	5	28	14
2011	6	11	9
2012	14	69	12
2013	31	66	8
2014	9	55	9
2015	7	106	14
2016	13	115	20

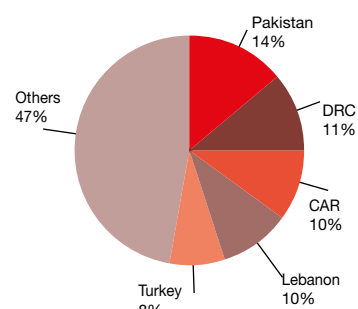
**Figure 1: Medicines procurement typologies in OCB missions**

% indicate the amount spent per country on medicines procurement as proportion of the total OCB expenditure in medicines

was 25.4M€, of which 20.1M€ were procured through MSF Supply. This amount represents approximately 10M€ less than in 2015, (Table 5). An additional 0.9M€ was spent on therapeutic food, mainly in South Sudan, DRC and Haiti.

Approximately 53% of the total expenditure on medicines lay with just five out of 32 missions (Figure 2), i.e Pakistan for the Hepatitis C and hospital projects, DRC is the second largest OCB operation, CAR for the conflict and Turkey & Lebanon for the conflict in Syria.

The total MSF Supply medical turnover (covering the above, but also including laboratory supplies and equipment, diagnostic tests and therapeutic food) accounted for 28 Million euros.

**Figure 2: Top five missions in terms of medicine procurement expenditures in 2016**

Eighteen items of the medical procurement list were responsible for 20% of the total expenditure of MSF Supply medical turnover (28M€). Among others, these 18 items include 6 anti-infective medicines (4 antivirals, 1 antibacterial and 1 antimalarial), 3 diagnostic tests (HIV, Hepatitis C and malaria), 2 Immunoglobulins/vaccines and therapeutic

food. Alcohol-based hand rub solution, examination gloves, compresses, fluid and paracetamol are also part of this top 18 items.

### 3.3. COLLABORATION WITH THE NDRA

The development of pharmaceutical regulations in developing countries, while in principle is positive, has generated importation constraints with NDRA's enforcing regulations which previously did not apply to MSF. In addition, the NDRA's in developing countries are not yet able to enforce international standards of quality on their local markets, and as such, these markets remain relatively unlegislated, leading to increased risks with local purchases (cf. §3.1). Moreover, national laboratories often lack the capacity and budget for quality control activities. Consequently a lot of time and resources are devoted to risk/benefit analyses by MSF. This results in shortages at field level.

The negotiation space at country level is usually limited. Pharmacists from HQ have set areas of collaboration with the NDRA during field assessments but there is a need to monitor the evolution of importation requirements and if necessary to maintain collaborations.

Finally, it is imperative that the possibility of importing medical items is assessed during exploratory missions and that all new project

**Table 5: OCB Total Medical Expenditures 2012- 2016**

Medical items	OCB Total Medical Expenditure (million euros)				
	2012	2013	2014	2015	2016
Medicines	12.4	15.5	13.7	22.5	14.9
Vaccines	0.6	1.0	0.7	1.1	1.6
Small medical supplies	4.0	4.9	9.6	6.8	5.2
Medical equipment	2.7	2.3	2.4	3.3	2.6
Medical kits	2.4	1.8	2.2	1.3	1.1
<b>Total</b>	<b>22.1</b>	<b>25.5</b>	<b>28.6</b>	<b>35.0</b>	<b>25.4</b>

**Table 6: Top 18 items responsible for 20% of the 28M €MSF Supply medical turnover in 2016**

Description	Expenditure (€)	% of Total turnover (28M€)
MALARIA HRP-2 TEST (SD Bioline), whole blood, 1 test 05FK50	730,579.4	3%
(mb NucliSENS) EasyQ HIV-1 v2.0, 1 test	608,556.3	2%
DACLATASVIR dihydrochloride (DCV), eq. 60 mg base, tab.	534,302.4	2%
RUTF, peanut paste, 92 g	476,570.8	2%
TDF 300 mg / 3TC 300 mg / EFV 600 mg, tab.	432,440.7	2%
HEPATITIS C TEST (OraQuick HCV), ser/pl/wb, 1 test 1001-0270	346,374.2	1%
INTERFERON pegylated alpha 2A, 180µg/0.5ml, syr.	306,364.8	1%
ARTESUNATE 60 mg, powder,vial +NaHCO3 5% 1ml +NaCl 0.9% 5ml	259,271.2	1%
GLOVE, EXAMINATION, latex, s.u. non sterile, medium	248,864.3	1%
ALCOHOL-BASED HAND RUB, solution, 500 ml, bot.	237,471	1%
COMPRESS, GAUZE, 10 cm, 12 plies, 17 threads, sterile	220,522.1	1%
VACCINE DPT / HEPATITIS B / Hib, 1 dose, multidose vial	213,070.7	1%
IMMUNOGLOBULIN HUMAN ANTITETANUS, 250 IU/ml, syr.	209,353.3	1%
RINGER lactate, 1 l, flex. bag, PVC free	187,302.2	1%
PARACETAMOL (acetaminophen), 500 mg, tab.	178,886.3	1%
PARACETAMOL (acetaminophen), 120mg/5ml,oral susp.,100ml bot.	176,152.2	1%
LPV 200 mg / r 50 mg, tab.	174,355.2	1%
AMOXICILLIN 500mg / CLAVULANIC acid, 62.5 mg, tab.	171,250.6	1%
<b>Total</b>	<b>5, 711,687.64</b>	<b>20%</b>

plans include medicine supply in their Memorandum of Understanding (MoU).

#### 4. GOOD DISTRIBUTION PRACTICES (GDP)

In the first three years of the GDP implementation pilot phase (ended in December 2016), 12 missions have been assessed, 25 medical stocks had Corrective Actions and Preventive Actions (CAPA) implemented and about 200 staff (medical, logistic and supply profiles combined) have been trained at field level.

Countries assessed remain under close supervision till the implementation of the recommended CAPA in order to reduce any potential risks to the patients related to the incorrect storage and distribution of the medicinal products. In 2016, the assessed countries were Guinea, Pakistan, South Sudan and Afghanistan.

In 2016, GDP and cold chain starts to become combined, moving under the same Technical Referent's management who also ensures the close collaboration between Medical, Supply and Logistic departments, due to the interdisciplinary and transversal nature of the subjects.

Emergency field support has been provided for the setup of complex operations as the Ebola Emergency ring vaccination in Sierra

Leone (vaccine to be stored at - 60°C) and the mass Yellow Fever vaccination in DRC (with 800.000 beneficiaries successfully vaccinated).

The training activity remained a fundamental focus so as to maintain the minimal technical awareness and ensure the continuous improvement.

The research and development activity continued also in 2016 and this mainly focused on the finalization and implementation of a remote temperature control system for the active cold chain. About 10 missions had adopted the device in order to secure their cold chain by receiving prompt alerts before the products get exposed to potentially harmful temperature excursions.

#### 5. PHARMACY MANAGEMENT

No pre-existing medical stock under supply department was integrated in 2016, keeping the ratio at 67% (37% at central level with 10 stocks and 63% at project levels with 17 stocks. 36% of "new" stocks or handed over stocks from EPOOL (Ukraine, Syria and Lebanon) are integrated (8 stocks).

The reason of the progress inertia is mostly due to operational field constraints. Seeing that several success criteria, milestones and timing are not met, the project "Implementation of Integration Policy" is being re-

viewed and results will be communicated in 2017.

A workshop on shared experience on integration policy was organized with country pharmacists during the OCB PharmaCoweek in July and the feedback was rather positive highlighting several positives changes such as more time for pharmacists to support projects, monitor and analyze stocks, more focus on GDP, GPP and harmonization of reporting tools. However, some concerns persisted on whether supply people had enough medical knowledge to manage medical products that pharmacists considered as a "speciality".

Effort on elaboration of SOP's and Working Instruction (WI) for stock management continued with translation in French. Reporting procedure (data compilation) started to be revised to provide a better overview for analysis. The number of missions using stock management tools remained 100% during 2016. A total of 63 software databases were functional over the missions. Lsystock was utilized by 52% (33 databases); Logistix by 16% (10 databases) and Unifield utilized by 29% (18 databases, deployment ongoing). Another tool was used by 3% (OCA tool in projects in Afghanistan).

Still this year, getting kKPI from all OCB medical stocks was problematic and no general compilation was finalized.

The year 2016 was marked by the implementation of the harmonized article codification rules adopted by all of MSF, embodied by **UniData** (MSF's central supply article database), that became operational end of May 2016. This had a big impact on the re-organisation of medical stocks and pharmacies with the introduction of new codes and new families: around 850 codes changed, 560 items moved to different existing families while 450 moved to 14 new families (2 existing families disappeared). The main changes affected laboratory, anesthesia and biomedical items. A "migration plan" defining implementation steps had been provided to the missions for them to be better prepared. After the migration, support from HQ referent continued on data base cleaning and code merging.

In 2016, fewer cold chain breakdowns were reported in both the field (8%) and during international transport (54%) as compared to the previous year, 2015 (Table 7). Whereas the total value of items involved was lower compared to previous year, for both field



**Table7: Cold Chain Breakdowns overview (2014-2016)**

	Field Cold Chain Breakdowns Report to Dr. Cold Chain			International Cold Chain Breakdowns Claims to MSF Supply		
	2014	2015	2016	2014*	2015	2016
<b>Number of breakdowns reported</b>	62	96	104	45	48	22
<b>Number of reporting missions</b>	13	18	23	15	11	10
<b>Number of items involved</b>	424	577	455	NA	NA	NA
<b>Total value of items involved</b>	709,694€	1,039,007€	850,283€	249,791€	502,034€	152,747€
<b>Total value of losses</b>	7915€	11,187€	15,272€	39€	52€	0€
<b>% of losses</b>	1.1%	1%	1.8%	0.02%	0.01%	0 %

\*Note: Value data only for the 41 freights managed directly by MSF Supply

breakdowns and international breakdowns, the total value of losses for field breakdowns increased (1,8% vs. 1,0% of total value involved) as compared to international breakdowns (0% vs. 0,01%).

## 6. GOOD PHARMACY PRACTICES IN END-USER UNITS: THE CASE FOR BETTER USE OF MEDICINES

Medicines are the most widely used intervention in health. They can have a positive effect on health, leading to reduced mortality and disease burden and consequently to an improved quality of life. At the same time, a large 'missed potential' exists because of the way in which medicines are used. For example, the right medicine does not always reach the right patient, some patients fail to take their medicine correctly and in many cases, the capability of the system is not sufficient to support the optimal use of medicines. There is much to be gained by using medicines more responsibly, primarily in terms of health gains; conversely, lost value has significant cost implications.

In 2016, a great deal of progress was made towards finalizing the first Good Pharmacy Practice Policy for OCB end-user pharmacies. The GPP aim can be defined as "efficient, safe, rational and cost-effective use of medicines" as well as "helping patients to make the best use of their medicines". To support this practice, a framework of quality standards and guidelines in the broad areas of Medicine Selection, 'last mile' Distribution and Storage, Good Dispensing & Safe Medication Practices and Training & Support all focused specifically on end-user pharmacy management was established.

Under the International Office umbrella, efforts are also joined to work on a portfolio of projects (collectively called the Medical pro-

gram) which serve a shared medical vision for providing better management of medical items starting at the patient. The goals are to fully support medical staff who are managing medical items particularly in the areas of medical standard list, consumption data collection, forecasting support and pharmacy management tools.

For the past years, the subject of antimicrobial resistance gained increasing recognition and importance both globally and within MSF. Recognizing the significant impact of antibiotic resistance on the health of individuals, the community and current and future MSF operations, the Pharma Unit is investing in a multidisciplinary approach to promote and monitor better the optimal use of antibacterial agents in our programs.

## 7. HUMAN RESOURCES

### 7.1. PHARMA UNIT

During 2016, the position of Pharmacy Management Referent was added in the Pharma Unit, allowing a more dedicated focus on medication management in end-user pharmacies. The Mobile Implementation Officer (MIO) Local Market Assessment/Coach Pharma also joined the Pharma Unit during 2016 providing the much needed support for the large number of local market assessments required to ensure quality in local procurement as well as coaching field pharmacists and supporting the section pharmacist.

### 7.2. FIELD PHARMACY POSITIONS

During 2016, there were a total of 70 full time pharmacy positions across OCB missions (a 14% increase from 2015), of which 63 were qualified pharmacists (or 90%, the same as for 2015). This included a regional pharmacist position in Southern Africa, emergency positions in Greece, Burundi, Haiti and Iraq and

four temporary coaching positions. The coverage of expatriate positions across all OCB missions in 2016 was 97% for Mission Pharmacy Manager positions and 84% for other pharmacy positions. In terms of expatriate departures, during 2016 this translated to 52 departures to cover 31 expatriate positions (compared with 41 departures to cover 28 expatriate positions during 2015). Of the departures in 2016, 17% of were first mission.

### 7.3. TRAINING ON PHARMACY MANAGEMENT

The annual drug management courses continued to be conducted in 2016. They were, a one-day on pharmacy management in the BLOC/FLMT, a three-day session on pharmacy and supply management added to the two-day Preparation for Departure (PPD) course, Intersectional Advanced Pharma week hosted by OCA, Hospital Management Team Training, Intersectional Supply and Stock Management course, Supply Manager course and Warehouse Management Course with 3 sessions (one in English, one in French, one delocalized in Kabul, Afghanistan). An OCB PharmaCo Week for 17 country pharmacists was organized in July 2016 for the first time. The objective was to bring together the mission pharmacist coordinators in order to provide specific procedures aiming to harmonize awareness of their roles and responsibilities in a changing set-up (stock integration) and also to coach them as the GDP and GPP responsible for each mission. The feedback was very positive. It is planned to be organized the same week in two years (in 2018).

### 8.1. LESSONS LEARNED IN 2016

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- The growing complexities related to pharmaceutical markets and the changing legislative framework in many developing countries has continued. This has not only created a heavier workload for HQ and field pharmacists but also for MSF Procurement Centres to provide the increasing number of documents requested by NDRAs.
- The reinforcement of MSF Quality Assurance Scheme for countries bound to local purchase has continued with field visits together with the creation or updating of databases.
- The intersectional pharmacist positions played an important role in coordinating the different MSF sections, ensuring that procurement policies were adhered to and maintaining good working relations with NDRAs.
- Collection of data on local purchases, donations and cold chain breakdowns continued to improve in 2016, but there are still missions performing local purchase without seeking HQ advice, which is risky.
- The migrant crisis pushed MSF to intervene in highly-regulated contexts (such as European Union) with stringent requirement demanded by the NDRA for the setup of pharmaceutical stocks. This new scenario underscores the fact that even in emergencies the lack of compliance to regulatory requirements might turn into an operational constraint.

### 8.2. PROSPECTS FOR 2017

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The various documents to be developed or finalised in 2017 include: 1) In-Country Transport Policy: expected to be finalized and fully implemented at field level by the end of 2017; 2) The Good Pharmacy Practice Policy in end-user units is expected to be implemented in 2017; and 3) the intersectional work on medical standard list, forecasting and data consumption will continue in 2017.

- Conclusion on the review of the project on implementation of integration policy will be finalized. Considering that new medical stocks should run under supply from the start, a new tool for medical stock management package will be developed.
- A clear deployment and communication flow should be established to allow the field to apply standard procedures. Monthly reporting system from the different software tools used in OCB will be revised allowing a better analysis, especially for Unifield for which “lessons learnt” from the deployment must be capitalized. Two new positions will be opened within the Supply Chain Direction in 2017: a warehouse management referent and learning and transport officer and, reinforcing warehousing and management capacity skills amongst supply teams on the field.
- 2017 will be a busy year of implementation of the new GPP policy, which should be finalized early in the year. To support this, the position of MIO GPP/Coach Pharma will be opened. This position will work together with the Pharmacy Management Referent for end-user units to support applying the GPP policy in practice, broadly across the field as well as providing coaching for less-experienced pharmacists.
- An antibiotic stewardship package including a detailed document to specify actions to support the optimal use of antibiotics was drafted in 2016. But many action points would still require development of a formal procedure, guideline, policy or tool to help the field implement the action, work to be continued in 2017.

# SEXUAL AND REPRODUCTIVE HEALTH

## 1. OVERVIEW

Compared to 2015, the volume of Sexual and Reproductive Health (SRH) activities increased. Although the total number of projects providing Emergency Obstetric Care (EmOC) decreased, the total number of deliveries and Caesarean Sections (CS) increased by 6% and 3% respectively. In 2016, total Post-Natal Care (PNC) consultations increased by 41% and Family Planning (FP) consultations by 29%. The provision of safe abortion care increased with doubling of the number of projects offering this service. Also post abortion care had almost a threefold increase. Services providing care to victims of sexual violence saw 14% more victims than 2015 (3,489 versus 3,051). Comparing to 2015, a decrease was observed in the total Sexually Transmitted Infections (STI) and Ante-Natal Care (ANC) consultations reported by the different missions. Since Médecins Sans Frontières Operational Centre Brussels (MSF-OCB) no longer has a vertical fistula project or campaign, no fistula surgery was performed.

## 2. PROGRAM ACTIVITIES

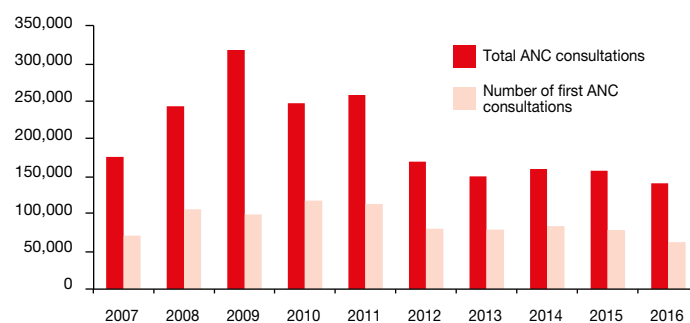
### 2.1. ANTENATAL CARE

The total number of projects offering ANC decreased by one (from 20 to 19) and the overall number of first consultations decreased by 20% (Figure 1). This decrease can be explained by the closure of 3 projects with important ANC activities in 2015-2016: Bikengue (Democratic Republic of Congo, DRC), Gogrial (South Sudan) and Kibera (Kenya). At the same time there were some impressive increases in ANC activities: Shatila project (Lebanon) presented a further increase of 32% (from 18,815 to 24,802) and Pibor project (South Sudan) a 21% increase (from 7,844 to 9,459) compared to 2015. Larger projects such as Masisi (DRC) and Kabul (Afghanistan) continued to present slight increases in ANC consultations.

#### 2.1.1. MALARIA SCREENING AND TREATMENT

Ten of the 19 projects reported malaria ANC screening data of which the majority have excellent screening coverage (68-100%). In Pakistan and Afghanistan where malaria prevalence is low, systematic malaria screening is not implemented at ANC and only suspected cases are screened. As a result, both Karachi and Kabul projects reported a low screening coverage (<1%). Malaria screening coverage in Masisi improved compared to last year (38% in 2015 and 68% in 2016). The Bili project (DRC) reported for the first year an impressive malaria screening rate of

Figure 1: Trend of total antenatal care consultations and first antenatal care visits (2007-2016)



98%. Projects which reported a high malaria positivity rate were: Bangassou, Central African Republic (CAR) (45%), Bikengue (39%), Bili (29%), Doro, South Sudan (20%), Gogrial (18%) and Chattisgarh, India (17%).

#### 2.1.2. SYPHILIS SCREENING

The number of projects reporting syphilis screening data increased in 2016. The Masisi project increased its syphilis screening coverage to 99% from 43% in 2015. Projects which reported a high syphilis screening coverage (>90%) were Kabul, Bassikounou (Mauritania), Karachi (Pakistan), Bikengue and Bangassou. In contrast, Gogrial and Kibera projects reported low screening coverage of 71% and 64% respectively due to closure of activities in 2016. Bajaur (Pakistan) and Bili projects respectively reported a screening coverage of 65% and 86%. Adequate opportunities to improve these indicators should be explored. Syphilis positivity rates vary between projects from <1 up to 7%. Projects reporting a high positivity rate

are: Gogrial (7%), Bangassou (7%), Bikengue (6%) and Bassikounou (5%).

### 2.2. OBSTETRICS

The total number of project performing deliveries increased by one (from 18 in 2015 to 19 in 2016). The number of projects with Basic Emergency Obstetric and Neonatal Care (BEmONC) activities also increased by one (from 18 in 2015 to 19 in 2016), while the Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) decreased from 11 in 2015 to 10 in 2016.

In 2016, large maternities as Khost and Kabul in Afghanistan and Timergara in Pakistan continued to increase their overall number of deliveries. The Castor project (CAR), which largely contributed to the increase of deliveries from 2014 (1,895) to 2015 (7,424), presented this year a slight decrease of activities (6,967 deliveries).

Although the number of projects offering delivery care and CS reduced, the total volume

of deliveries (6%, from 71,196 to 75,474) and CS (3%, from 4,588 to 4,706) slightly increased (Figure 2). The top 10 projects with the highest volume of deliveries cover 93% (70,605) of the total volume. This is equally so for CSs with the top 10 projects covering 97% (4,586) of procedures.

Looking at Afghanistan alone, the mission was once more contributing 51% (38,750) to the total volume of deliveries in OCB projects and contributed to the increase in total deliveries compared to 2015. Excluding the Afghan projects, the increase in total deliveries compared to 2015 was relatively small (2% increase in 2016 versus an 18% increase from 2014 to 2015).

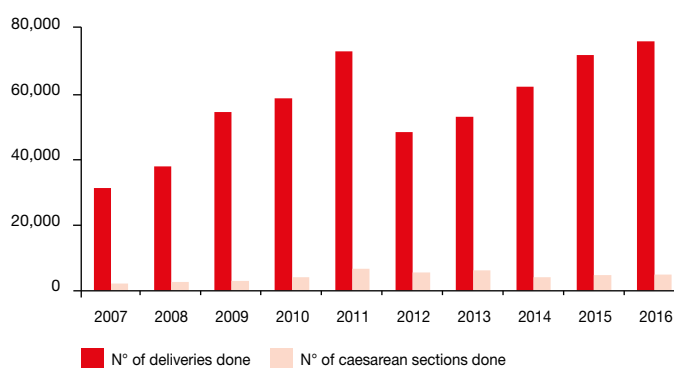
Over the years, a rapid and huge increase of activities has been observed in Khost. Originally, the maternity was designed to manage 1,200 deliveries/month. Today, with a total of 1,674 deliveries/month the mission is confronted with a high work load and challenges at various levels. In the coming year a patio will be launched to plan construction of new services. According to the new plan, the maternity will be designed to manage a total of 2,100 deliveries/month. In addition, MSF will support more BEmONC centres and support the provincial hospital with construction works, donation of medical material and payment of health care staff etc. However, decentralisation of care will not reduce per se the overall volume of deliveries at Khost level. At the moment, MSF aims to increase referral of patients with obstetric complications.

The volume of CSs also increased from 2015 to 2016. Since many years, when comparing to other projects, Masisi reports the highest proportion of CSs (30%). The project implemented different strategies to reduce the high proportion of CSs such as monitoring and reviewing CS indications and allocating an expatriate gynaecologist. These efforts contributed to a successful decrease of CSs by 10%. A similar trend was observed in Bili project, which decreased its CSs by 6%.

### 2.2.1. MATERNAL OUTCOMES

Compared to last year, MSF projects overall reported an almost equal number of maternal deaths (69 in 2016 vs 68 in 2015). The highest figures are from Castor (15), Timergara (14) and Masisi (8). Despite the increase of total deliveries in Khost, a decrease of maternal deaths was reported compared to last year (11 in 2015 and 4 in 2016). Five projects reported less than 5 maternal deaths,

**Figure 2: Trend of deliveries and caesarean sections (2007-2016)**



while five other projects reported no maternal deaths. This could be explained by the fact that some projects are BEmONC structures which refer women with obstetric complications and apply strict referral criteria.

All projects which offer obstetric care are recommended to conduct a verbal analysis for each maternal death. A standardised maternal death review form is created by the SRH unit and support is ad hoc given to the projects.

Simply assessing the total number of maternal deaths out of all deliveries occurring in a hospital is not a sensitive enough marker to measure the quality of obstetric care. An alternative is to focus on all women presenting with severe obstetric morbidities, collectively termed as Direct Obstetric Complications (DOC). The number of maternal deaths related to DOCs (termed as the DOC case fatality rate) is a good indicator of the overall quality of obstetric management. Low case fatality rates suggest high quality of care, since they imply that patients with severe morbidity are unlikely to die as a consequence of their condition. Conversely, high rates suggest gaps in maternal care. This international case fatality rate is set at <1%.

When a maternity (BE/CEmONC) presents a high proportion of DOCs out of the overall total of deliveries, it indicates that patients with severe obstetric morbidities reach our facilities. As last year, the highest percentage was presented by Castor project (35% in 2016 and 41% in 2015), followed by Bangassou (23%) and Timergara (20%). For the first year Bili project reported an impressive 31% of DOCs. The Bajaur project located in a conflict-afflicted and difficult to reach area in Pakistan, with its 22% of DOC admissions, remarks the importance to access for treatment of obstetric complications.

In 2016, DOC case fatality rates of >1% were observed in Bikenge (2.9%) and Pibor (1.9%)

projects. Last year Gogrial project reported a 13% DOC case fatality rate. Knowing that Gogrial and Bikenge project closed in 2016, access to safe delivery care remains worrisome in these respective areas.

### 2.2.2. NEONATAL OUTCOMES

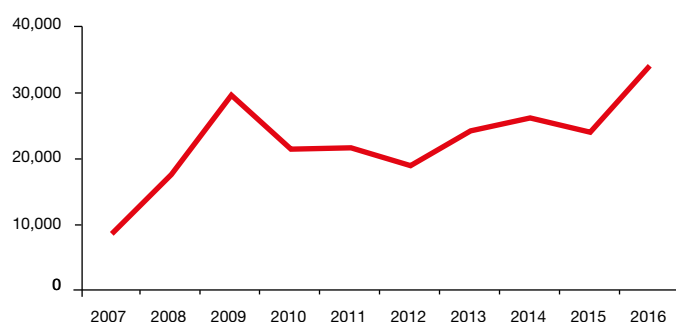
High stillborn rates were observed in Timergara (9%) and Bili (5%). Thirteen other projects reported a stillborn rate between 1% and 4%. Further analysis is required to define if these intra partum deaths occurred before or during admission at our maternity facilities. Intra-partum foetal deaths occurring during admission can be an indicator of poor intra-partum management. Additionally, the Timergara project is challenged by referrals of patients with an un-regulated use of Oxytocin outside its facility, which can lead to severe birth asphyxia. At the same time, the mission presented a high DOC rate of 20% and it is known that, whenever the mother's condition is critical the foetus has a higher likelihood of poor foetal outcome.

Activities in relation to low-birth weight neonates and sick new-borns are covered in the paediatrics section of this report

### 2.3. POSTNATAL CARE

There was a slight increase in the number of the projects offering PNC, from 16 in 2015 to 17 in 2016. Overall, the total PNC consultation increased by about 10,000 compared to last year's activities (Figure 3, page 78). Compared to 2015, the four projects reporting PNC activities are: Bili, hurricane Matthew emergency intervention (Haiti), Idomeni and Lesbos projects (Greece).

The top 6 projects, yearly reporting >1,000 PNC consultations, were responsible for 87% (29,641) of the total volume of PNC consultations. Similarly to 2015, Masisi and Kabul projects reported the highest volume of PNC consultations and activities contin-

**Figure 3: Trend of postnatal care consultations (2007-2016)**

ued to increase. Shatila project presented an impressive five-fold increase (from 920 to 5,033 consultations) and Doro project showed an almost twofold increase compared to last year (from 1,956 to 3,726 consultations). Despite the fact that the project was in its closure phase, activities in Kibera continued to increase.

One quality indicator related to PNC is the timely presentation at first PNC consultation i.e. first PNC visit occurring within 7 days post-delivery. The number of projects reporting this data doubled compared to last year (12 in 2016) and the proportion of timely first PNC visit varied between 12% (Kabul) to 100% (Bikenge, Bili and Masisi). This could be explained because the DRC projects offer first PNC consultation to all women delivering in our health facilities upon exit, and are as such counted as PNC <7 day. Projects which improved their PNC timely presentation are: Pibor (from 21% in 2015 to 69% in 2016) and Karachi (1.4% in 2015 to 61% in 2016).

## 2.4. ABORTION CARE

All MSF (supported) BEmONC and CEmONC structures provide post abortion care. Termination of Pregnancy (ToP) on request should be available in all those MSF projects where it is relevant and feasible.

### 2.4.1. SAFE ABORTION CARE

The total ToP cases almost doubled compared to last year (from 258 in 2015 to 550 in 2016). Since 2014, there has been an increase of ToP cases performed and referred (from 222 in 2014, 258 in 2015 to 550 in 2016).

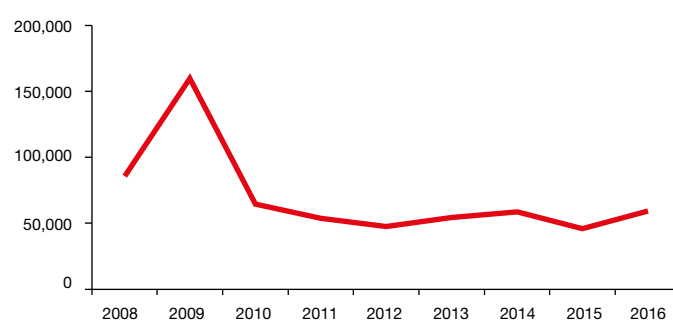
In 2016, MSF referred 66% (363) of all ToP requests to external partners such as Marie Stopes International and public and private services. A total of 17 ToP cases were referred to Marie Stopes International by 3 projects, representing only 5% of the total ToP referrals. One project, which covered 84%

(307) of the overall total ToP referrals in OCB, referred to a private practice. Five other projects referred to public services for provision of ToP care. Seven other projects offered ToP care at project level, which represents 34% (187) of the overall total ToP care provided by OCB.

Some projects are confronted with ethical and medical challenges regarding the provision of second trimester ToP. For those cases, the gynaecologist advisor is regularly consulted for advice. To support field staff better, the SRH unit plans to define clearer guidance for second trimester ToP. Further, we notice that different projects are ambitious regarding the provision of ToP. We will have to continue monitoring the quality and accessibility of the care provided. As an example, some standards need to be put in place when ToP is provided through referral e.g. medical assessment of the referral place, provision of contraceptives, re-imbursement of cost for medical care and transport. In addition, a ToP database was created and shared with missions to improve monitoring of these activities.

### 2.4.2. POST ABORTION CARE

Over the course of 2016 there has been an almost threefold increase (from 1,130 in 2015 to 2,963 in 2016) of post-abortion care activities. Projects presenting an increase of post-abortion care activities are Kabul (from 226 in 2015 to 870 in 2016), Masisi (from 62 to 393)

**Figure 4: Trend of family planning consultations (2008-2016)**

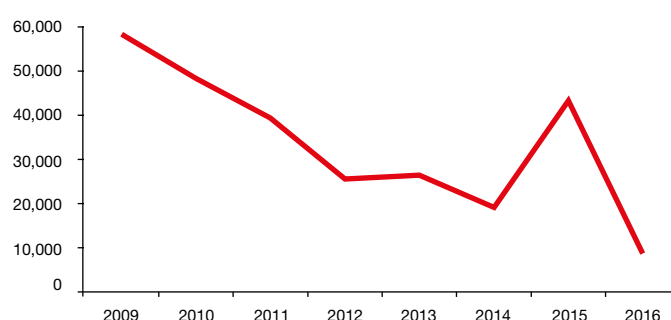
and Doro (26 to 78). Some projects reported high rates of abortion complications: Doro 40 %, Masisi 25%, Khost 20%, Bangassou 19% and Castor 18%. This illustrates as well the need of provision of safe abortion care.

## 2.5. FAMILY PLANNING

Whereas, the total number of FP projects decreased, the total number of FP consultations increased by 29% from 45,989 in 2015 to 59,456 in 2016, (Figure 4). Different factors may have contributed to this: in 2016, the Malawi corridor project presented a more than five-fold increase of consultations compared to 2015 (from 128 to 671); Kibera project still has the largest volume of FP consultations (11,586, 19% of total FP consultations). In DRC and CAR the different projects have applied context specific strategies to increase their FP uptake.

## 2.6. SEXUALLY TRANSMITTED INFECTIONS

STI treatment was offered at different service points and in both out- and in-patient departments, therefore capturing all STIs diagnosed remains a challenge. STI is often not the first "diagnosis at exit" in in-patient departments, and most likely resulting in the underreporting of STIs cases. Compared to 2015, the overall number of STIs critically dropped from 43,333 in 2015 to 8,672 in 2016 (Figure 5).

**Figure 5: Trend of consultations for sexually transmitted infection (2009-2016)**



This can be explained by the fact that some projects (Mozambique corridor and the vertical Human Immunodeficiency Virus / Prevention of Mother to Child Transmission, HIV/ PMTCT programs) did not report on STI data and also the Roma (South Africa) and Mpoko (CAR) were closed and no data was reported. At the same time, it should be considered that routine review of retrospective data at head quarter level highlighted the possible presence of errors in 2015 datasets. Nonetheless, the number of STIs reported in 2016 remains half the figures reported in 2014.

## 2.7. PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV

PMTCT of HIV was supported in 9 projects (Gutu, Nsanje, KwaZulu-Natal, Changara/ Marara, Bangassou, Castor, Matam, Centres and Kibera) in 7 countries (Zimbabwe, Malawi, South Africa, Mozambique, CAR, Guinea and Kenya). Six of these projects were within vertical HIV/TB programmes, whilst the remaining three were integrated into projects providing general SRH and/or out-patient services. In 2016, the CAR projects (Bangassou and Castor) did not report PMTCT data. As MSF is no longer supporting the PMTCT activities in the Gutu project (Zimbabwe), all data is collected by the Ministry of Health (MoH). Furthermore MSF is no longer involved in the data quality assurance.

A total of 48,713 women came for the first ANC visit. Of these 42,093 (86%) women had an unknown or negative status and were tested<sup>1</sup>. One-thousand seven-hundred and twenty-two women resulted to be positive (ranging from 6% in Zimbabwe, 4% in Malawi and 3% in Guinea, Kenya and Mozambique).

Regarding HIV testing at first ANC visit, most projects present a 100% testing rate, which is a realistic target compared to last year's results (89-100% testing rate in 2015). When looking at specific projects as Nsanje (Malawi), one of the largest sites, which tested 94.5% of pregnant women, almost 600 pregnant women were missed for testing. Similar results were reported for Guinea (Conakry Matam and city health centres).

The proportion of women attending first ANC visit with a known HIV positive status and not being on Anti-Retroviral Treatment (ART) is high for Gutu (Zimbabwe, 52%) and KwaZulu-Natal (South Africa, 21%). In contexts with high fertility rates, women are probably drop-

outs from previous pregnancies under a B+ option. Or, delays occurred in the implementation of the universal ART eligibility guidelines. Or, pregnant women are not ready to start ART treatment.

Retention of women initiated under B+ option is a well-documented concern when compared to retention rates at 12 months for the general adult population. Conakry project exceptionally retained their HIV positive cohort under B+ option, while all other programmes showed clear patterns of ART drop-out at delivery and/or at the end of the breastfeeding period. It is important to identify non naïve status in order to prevent Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs) and Nucleoside Reverse Transcriptase Inhibitors (NRTIs) resistance.

## 2.8. OBSTETRIC FISTULA

Last year a dramatic decrease in Obstetric Fistula (OF) care activities was observed as no fistula campaigns were organised and the vertical OF care project (Gitega) in Burundi was closed. Several projects are referring patients to partner organisations and no data is available for these referrals.

In 2016, the capitalisation report of the Gitega project has been disseminated at different platforms (media, operations, field etc.) with the objective to share the acquired expertise and lessons learned from this project. The SRH unit presented the Gitega capitalisation report during the annual revision of the medical department activities. Concerns for the absence of OF activities in OCB were shared.

Certain strategies should be applied in order to increase OCB OF activities. At project level: to improve registration of OF patients in need of surgery and discuss planning and organisation of OF campaigns; to implement registers and databases in order to improve the OF data collection; to implement the secondary fistula prevention and curative management of fresh fistula treatment protocol. At head quarter: prior to the annual revision of operations, to discuss the relevance and need for opening a new OF project – proposal can be made by the SRH unit based on needs assessment.

## 2.9. ACTIVITIES IN RELATION TO CERVICAL CANCER

MSF started screening for cervical cancer in Gutu district, Zimbabwe in August 2015.

These activities were ongoing in 2016. Screening is happening in both HIV positive and HIV negative women in the rural clinics (screening was expanded from 4 to 6 clinics in 2016). Screening is done by the method of Visual Inspection Acetic Acid and Cervicography (VIAC).

The total number of women screened was 4,787, with a proportion of 27% (1,279) of them being HIV positive. Eighty-nine per cent was 25 years or older<sup>2</sup>. Three-hundred and eighty-six patients (8%) were VIAC positive (10% positivity rate among the HIV positives, 6% in the HIV negatives) and 42 patients (1%) were suspicious of cancer. Cryotherapy was done in 291 VIAC positive patients and 148 patients were referred (for Loop Electrosurgical Excision Procedure, LEEP or for suspicion of cancer or for a second opinion to Harare).

Objectives for the Gutu mission in 2017:

- Increase coverage in the HIV cohort (the mission's aim is 80% coverage in 2018).
- Participate in Human Papilloma Virus (HPV) school vaccination campaign of the MoH (girls between 9 and 13 years old).
- Conduct an operational research study on both HPV vaccination in HIV positive adolescents and on HPV GeneXpert screening as first entrance gate for the cervical cancer screening as recommended by WHO. A protocol is currently being reviewed by the national Ethics Review Board.
- In 2016, all patients requiring LEEP were still referred to Harare (Newland's clinic), while a medical officer was trained. In 2017 the mission will be able to offer LEEP in Gutu in collaboration with the MoH.

## 2.10. EBOLA

The 2014 Western-Africa Ebola epidemic was declared several times over, the last time in June 2016 (42 days after the last cases in Guinea and Liberia). Since then, there have been no new confirmed cases. There were no new updates on Ebola and pregnancy, nor any other pregnant Ebola patients. Operational research (on all patients in this epidemic and on ethical issues in clinical trials and pregnancy) will be ongoing in 2017.

## 2.11. CARE FOR VICTIMS OF SEXUAL VIOLENCE

Care for victims of sexual violence (SV) was provided in 20 projects, offering consultation

<sup>1</sup> Figures do not include data from Castor project (CAR) as PMTCT is normally initiated during delivery time.

<sup>2</sup> Screening done according to Zimbabwean national protocol: all female patients between 18 and 65 years old are eligible for screening.

to a total of 3,489 victims (Figure 6). Similarly to 2015, the majority (92%) of victims were seen in only six projects: Mbare (Zimbabwe), Maadi (Egypt), Masisi, Castors, Rustenburg (South Africa) and Kibera. The top 6 projects (>100 SV victims consulted/year) continued to see an increase of activities. Rustenburg project in South Africa went up from 62 victims in 2015 – first year of activities – to 292 in 2016. Similar trends were observed in Bili project (from 19 to 55) and the maternity project in Castor (from 294 to 537). Timergara project in Pakistan reported for the first year 19 SV cases. The SRH Mobile Implementation Officer (MIO) supported the mission to improve the SV patient flow and training of staff. SV care is now integrated into mental health services. This represents an important achievement in a sensitive context where SV disclosure remains particularly challenging.

Timely presentation at health service is crucial for a victim of SV. Seventy-two hours represent a temporal limit to ensure effective medical care for treatment of injuries, post-exposure prophylaxis (e.g. against HIV, STI) and emergency contraception. Masisi project presented the greater proportion of victims arriving in less than 72 hours after the assault (77%), followed by Mbare (44%) and Castor (15%).

The adequate follow-up of victims of SV is also challenging. In Mbare project, the majority of victims returned for the first follow up visit (59%) but poorly complied with subsequent visits. In Masisi project, 38% of victims presented for their third visit and in Castor project a remarkable 49% even presented up to the fifth follow-up visit. These results are encouraging, in terms of acceptance of services and recovery of the victim. Special attention is nonetheless to be given to the completion of vaccination schemes. In Castor project, 94% of victims started Hep B vaccination but only 3% of them completed all doses and 26% in Masisi project.

### 3. TRAINING

- The intersectional SRH course was organised by the MSF Operational Centre Amsterdam (English) and Operational Centre Geneva (French).
- Decentralised Advanced Life Support in Obstetrics (ALSO) courses (led by OCB) were ran in Afghanistan (4), Lebanon (1), CAR (3) and Pakistan (2).
- Dusseldorf training, for the first time as an intersectional advanced gynaecology training was organized (2 ½ days with OCP as main organiser). OCB gynaecologist advisor participated in 2 modules.
- In 2015, the SRH Working Group developed an advanced field based SV training (available in English and French). It is tailored to MSF aiming to improve staff's capacity to identify needs related to SV care and to prepare, implement and monitor comprehensive care. At first the course was piloted in DRC and Kenya. Based on gathered recommendations the training toolkit was adapted. In 2016, the program was further rolled out and several trainings were organised in the field.
- A Training of Trainer (ToT) course for the SV field based training was organised in Brussels headquarters and 4 OCB participants attended.
- Different SRH modules were included in several other OCB trainings.
- At the yearly coordinator week, the SRH team hosted a debate on the provision of safe abortion care in MSF projects.

### 4. COMMUNICATION IN VARIOUS PLATFORMS

- Presentation of the abortion video “We can do more” and/or international abortion leaflet to the OCB board, OCB medical department, OCB head quarter staff, Brazil/BRAMU section, HR directors of OCB and

partner sections and through an article in the OCB Contact of November 2016.

- A small “Safe abortion care” information booth was held at the OCB GA with presentation of the abortion leaflet together with a “barriers/opportunities” game.
- Poster presentation on Ebola and pregnancy in the 8th International Symposium on Filoviruses in Antwerp (September 2016).

### 5. FIELD VISITS

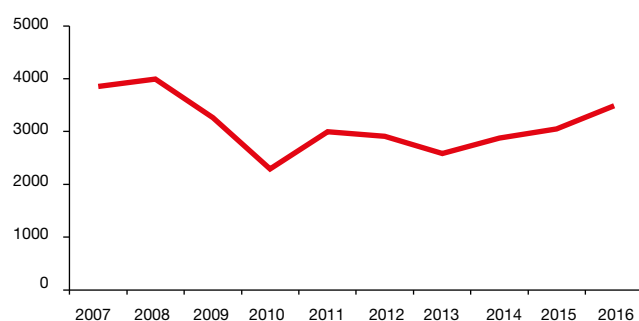
The SRH advisor and advisor support conducted field visits to Afghanistan, DRC, South Africa and Lebanon missions. The MIO midwife supported the field with the implementation of SRH related activities in CAR, Idomeni, Karachi, Timurgara and Bajaur. Additionally, the MIO midwife supported OCP with the organisation of the SV field based training in Kampala, Uganda, participated in the ToP task force meeting in Kinshasa and supported the DRC HIV project with training.

The Gynaecologist referent conducted 9 field visits/gap fillings in 2016 in CAR, Kenya, Afghanistan (2 field visits, one combined with ALSO course and one gap filling) Egypt, Venezuela, Mozambique, (OCG field visit) and Lebanon.

### 6. NEW DEVELOPMENTS AND INNOVATIONS

- Finalization of the Traditional Birth Attendant (TBA) collaboration and guidance paper.
- The international SV patient file was finalised.
- The intersectional report on cervical cancer prevention, screening and treatment was completed and the OCG mission in Mozambique was supported to evaluate the project cervical cancer screening activities.
- The short internal MSF film on Safe Abortion Care (SAC), named “We can do more” was made and screened at different platforms.
- At the end of 2015, the task force supporting to the implementation of safe abortion care in relevant projects in DRC was launched.
- In December, a first Abortion Values Clarification and Attitude Transformation (VCAT) and short VCAT ToT were organized at OCG head quarter in collaboration with

Figure 6: Trend of consulted patients for sexual violence (2007-2016).



lpas (a non-governmental organization working on safe abortion care). Five OCB participants attended.

- The ALSO addendum was revised.
- MINOS SRH indicators and MINOS overview sheets were revised (ongoing process).
- In collaboration with the International Centre for Reproductive Health (ICRH) knowledge was gathered on Intimate Partner Violence. The Intimate Partner Violence screening tools have been revised and shared with relevant projects.
- In May 2016, the capitalisation report on the management of Obstetric Fistula in the Gitega Fistula Centre (GFC), Burundi was finalised and shared at different platforms.
- The Unit participated in writing the chapter "Pregnancy and Ebola" in the new MSF Ebola guide and writing the book "Reproductive health in Ebola times" (by the Anthropology Department of the University of Florida).
- The adolescent SRH care guidance paper is under development and is planned to be finalised in 2017.

For operational research, see Annex Operational Research & Documentation.

Additional resources:

#### Sexual Violence

- *Factors associated with timely access to care for victims of sexual violence: a multi-centric study across Médecins Sans Fron-*

*tières services in Africa from 2012 to 2015.* (dissertation, Master of Public Health, student Guido Benedetti)

- *Comparison of the care requirements for people who are raped and people who consented to sex as a minor in Harare, Zimbabwe.* Harrison R., Pearson L., Vere M., et al. (manuscript submitted to PLoS One in September 2016)
- *Survivors of male sexual violence: who are they and do we respond to their needs?* (dissertation, Master of Public Health, student Eva De Plecker)
- *Sexual violence and rape in Rustenburg: Results of household survey and implications for service provision conducted by Rustenburg SV project, South Africa* (conducted by the Rustenburg project, South Africa)
- *Follow-up study to assess changes since 2010 in knowledge, perceptions, and assistance-seeking behaviour related to sexual and gender-based violence (SGBV) in the population of Mbare, Zimbabwe* (Knowledge, Attitude and Practice survey conducted by the Mbare project, Zimbabwe)

#### Obstetrics

- *Provision of Emergency Obstetric Care at secondary level in a conflict setting in rural Afghanistan – where are the emergency cases?* Lagrou D, Zachariah R, Bissell K et al. (manuscript submitted to Conflict and Health)

#### Cervical cancer screening

- *Feasibility and acceptability of the Human Papilloma Virus vaccine as primary prevention for Cervical Cancer among HIV (+) girls and decentralisation and feasibility of the Genexpert Human Papilloma Virus Test as a screening method for cervical cancer prior to visual inspection with Acetic Acid procedure Among women in rural Zimbabwe.* (Gutu project, Zimbabwe, final stages of approval in the ERB).

#### Ebola

- *Pregnancy and Ebola: management and survival in the 2014-2015 West Africa epidemic.* (manuscript submitted to the Lancet and presented at the 8th Filovirus conference, Antwerp – poster presentation).
- *Ethical issues pregnant women in the Ebola trials.* (presented at the Global Forum for Bioethical Issues in Research, November 2016, available at: <http://www.gfbr-global/past-meetings/11th-forum-buenos-aires-argentina-3-4-november-2016/>). A viewpoint was published about pregnant women in clinical trials in collaboration with Canadian ethicists (Impact Ethics website). Available at: <https://impactethics.ca/2016/11/25/nubia-an-ebola-survivor-orphaned-by-vaccine-policy/>. Translated in Spanish.

## 7. LOOKING BACK AND AHEAD

### 7.1 LESSONS LEARNED IN 2016

- Following its success, the MIO midwife contract was extended to respond to the continuous demand for SRH support visits.
- The dissemination of the SAC movie and abortion leaflet has been successful and should be continued.
- The Task Force on abortion in DRC has "opened" the discussion regarding provision of safe abortion care in DRC. The Task Force objectives are clearly defined and 2017 should be the year for further implementation through field visit support, HR support, etc.
- Close collaboration with the operational department. Especially the pre-ARO meetings were an opportunity to better understand the missions and by consequence to give better support to the field.
- The decentralized ALSO, SRH and SV trainings were successful.
- Appraised willingness by Medical Directors to invest more in cervical cancer prevention screening and treatment.

## 7.2 PROSPECTS FOR 2017

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- Finalisation and dissemination of the adolescent guidance paper.
- Based on request of different missions such as South Sudan and India, support on TBA collaboration will be provided.
- The SRH MIO will support the following missions: DRC, South Africa, Mauritania, South Sudan and Pakistan.
- The DRC abortion task force coordinator and Masisi mission will be supported for the implementation of SAC.
- The SRH and Gynaecologist advisor will visit different missions i.e. Zimbabwe, South Sudan, Burundi, CAR and Greece.
- Documentation of the lessons learned and tools developed by the MIO midwife will be finalised and made available for further dissemination.
- Continuous support will be provided to the different missions regarding the implementation of SAC.
- Support will be provided to different patios in Masisi, Khost, Mauritania and Sierra Leone.
- Provision of a “pre-COPRO” support for new projects is underway in, amongst others, Haiti, Bolivia, and Venezuela.
- Proposal and guidance for operations on the identification of fistula campaigns and projects will be prepared for the upcoming annual review of operations.
- In collaboration with the Paediatric and Nutrition advisors, an electronic breast pump will be piloted in the field. A user manual, protocol and implementation tools will be developed.
- New projects with SRH components to foresee are Mauretania (Barkeol), Venezuela, Bolivia, Lebanon (Akkar) and Sierra Leone (Gorama Mende Wandor and Kenema).
- Following the revision of the ALSO addendum, the related power-point presentation, exams and production of ALSO posters (pre-printed) will be updated.
- All data analysis on pregnancy and Ebola will be finalized for publication.

# SURGICAL CARE

## 1. OVERVIEW

MSF-OCB's Surgical Policy describes surgical care as the *"provision of quality surgery and anaesthesia"*. In order to reduce mortality, morbidity and disability, surgical care is considered as an integral part of the whole medical care. Although surgery commonly is viewed as a costly and high demanding activity, surgical care provided in low-resourced district hospitals has proven to be cost-effective, just like other selected primary health interventions. In projects run by Médecins Sans Frontières Operational Centre Brussels (MSF-OCB), we ensure access to quality surgical and anaesthetic care, supporting the MSF values.

In 2016, following the trends of the previous years, surgical care in OCB consisted mainly of lifesaving and essential surgery, requiring low technology and was based in district hospitals in most of the projects. OCB also continued its operational strategy of developing trauma-related surgery with provision of a high-standard of orthopaedic care. Surgical care was provided to victims of violence (e.g. in Bujumbura, Burundi) and in the context of epidemics (e.g. in Mukedi, Democratic Republic of Congo DRC).

## 2. PROGRAMME ACTIVITIES

### 2.1. SURGICAL ACTIVITIES AT COUNTRY AND PROJECT LEVEL

By the end of 2016, there were 14 projects offering surgical care (Annex). Over the course of the year, 3 projects offering surgical care were opened or newly started while 2 were closed. Two projects started providing surgical care in 2016 in South Sudan i.e. Bor and Pibor. The Bikenge Project in the DRC was handed over to the local authorities. During a typhoid fever epidemic in Mukedi (DRC) a short and specific surgical response was provided.

Similar to previous years, surgical activities varied by project, with some mainly offering emergency surgical care (e.g. Bassikounou, Mauritania); some dedicated to obstetric surgery (e.g. Castors, Central African Republic CAR) and some dedicated to specific pathologies or conditions (e.g. trauma care in Tabarre, Haiti). Here we only report on the projects with direct MSF involvement in surgical activities. Nyabiondo project in DRC was excluded as the management of surgery was done by Ministry of Health staff and OCB only provided material support to perform surgical activities.

### 2.2. SURGICAL ACTIVITIES BY INDICATION

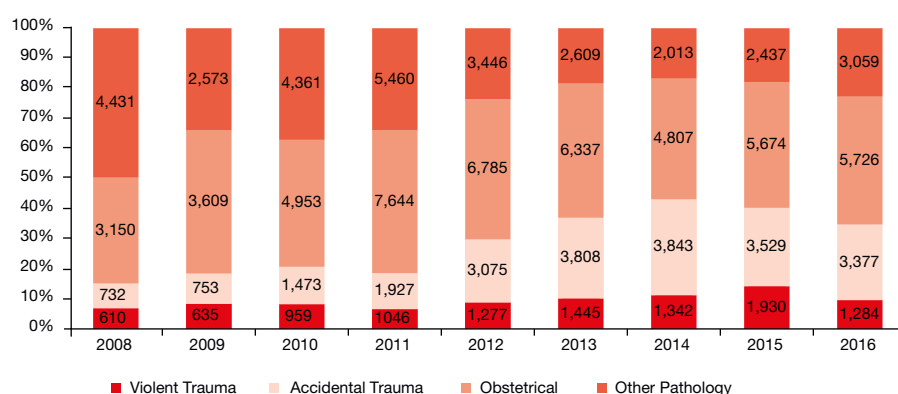
During 2016, there were 13,446 primary interventions (new cases), quite comparable to 2015 (n=13,570). This also reflects the number of patients (new cases) who benefited from surgical care.

After increasing over the previous five years, violent trauma as an indication for surgery decreased from 14% of all new cases in 2015 to almost 10% in 2016. The closure of Kunduz project (Afghanistan) which had a high caseload of trauma cases could explain this. The proportion of accidental trauma as an indication for surgery remained similar to 2015. In 2016, obstetric pathology remained very similar to the previous year in absolute numbers and in proportions while other pathologies increased slightly from 18% to 23% of the total (Figure 1).

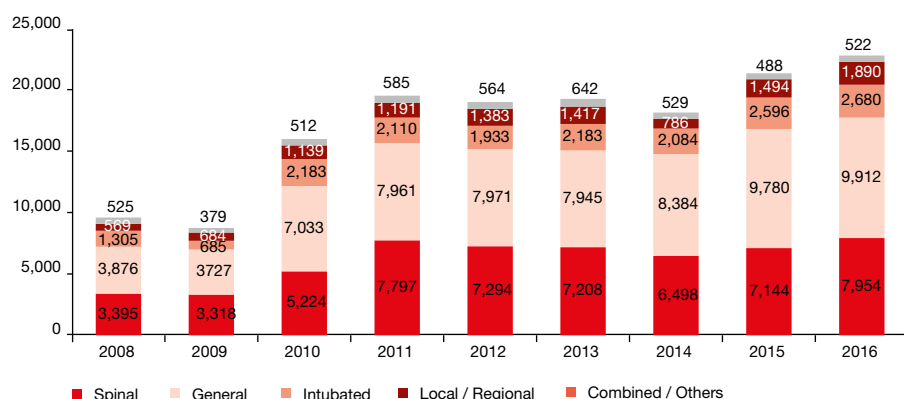
### 2.3. PERFORMED ANAESTHESIA

During the year 2016, MSF-OCB provided anaesthesia in 22,958 interventions in all 14 projects with direct activities, which showed an increase of approximately 7% compared to the previous year (2015, n=21,502), (Figure 2, page 84). The total number of anaesthetics also indicates the total number of entrances to the Operating Departments (ODs) which is higher than the numbers of primary interventions as some of the procedures were re-interventions. The increase of 7% in entrances to OD does not correlate with the decrease of new cases (-1% in comparison to 2015). The higher workload (entrances to OD) in relation to the caseload (new cases) can be explained by an increase in re-interventions due to trauma care in projects such as Bujumbura (Burundi), Bangassou (CAR), Masisi (DRC) and Tabarre (Haiti).

Figure 1: Indications for surgery expressed in proportions, 2008 - 2016





**Figure 2: Types of anaesthesia expressed in absolute numbers, 2008-2016**

No major differences in the anaesthesia procedures were observed in 2016. Regional anaesthesia was more performed (n=217) in trauma centres (Tabarre and Bujumbura). The quality of anaesthesia care is challenging to assess at project level since the types of surgical interventions vary considerably. However, the proportion of spinal procedures for Caesarean Sections (CS) is a useful proxy quality indicator as spinal anaesthesia is widely recognised as the procedure of choice for this intervention. A proportion >75% is regarded as good quality of anaesthesia provision. It is encouraging to know that 89% of CSs were performed under spinal anaesthesia during 2016. This excellent level of anaesthesia provision for CS is higher than the previous year (83%).

## 2.4. SURGICAL PROCEDURES BY TYPE

OCB projects performing direct surgical activities reported 26,579 surgical procedures in 2016. This number exceeded the number of entrances to the OD/performed anaesthetics because multiple surgical procedures can be performed under the same anaesthesia procedure (during the same intervention). It is an important indicator showing the work done by the surgical team and allowing appropriate monitoring of the use of material resources in the project.

As described in previous reports, not all projects were able to record more than one procedure per intervention. In order to present a systematic and unbiased analysis, only the primary ("type 1") procedures are thus reported here (n=22,958), Figure 3. The proportions of surgical procedures (including CS) remained similar to 2015.

## 2.5. EMERGENT SURGERY

Emergent surgery is defined as urgent (life-saving and acute emergencies) or delayed (with a wait of no more than a few days without significant morbidity) cases, as opposed to elective surgery. In MSF, certain planned procedures are considered essential and address conditions amenable to a proven surgical treatment. The conditions may not affect the patient's health or life immediately but may result in suffering, handicap and/or disability. Surgical activities can thus be classified into three degrees of urgency: urgent, delayed and planned elective. As urgent versus delayed surgery is a relatively subjective classification, emergent surgery as a whole is a more appropriate indicator across different projects.

In 2016, 22,185 emergent cases were reported representing 97% of all surgeries and remaining similar in proportions to that of the previous year (96%). The analysis of emergent versus planned elective cases is important in programmatic planning. The knowledge of the performed types of surgical cases assists in human resource planning (type and number of specialists) and influences the type of infrastructure, medical

equipment and supply needed. Additionally, it can help guiding operational strategies: e.g. if a surgical programme in a conflict area has many non-trauma and non-emergent cases, it may be too distant from the active conflict.

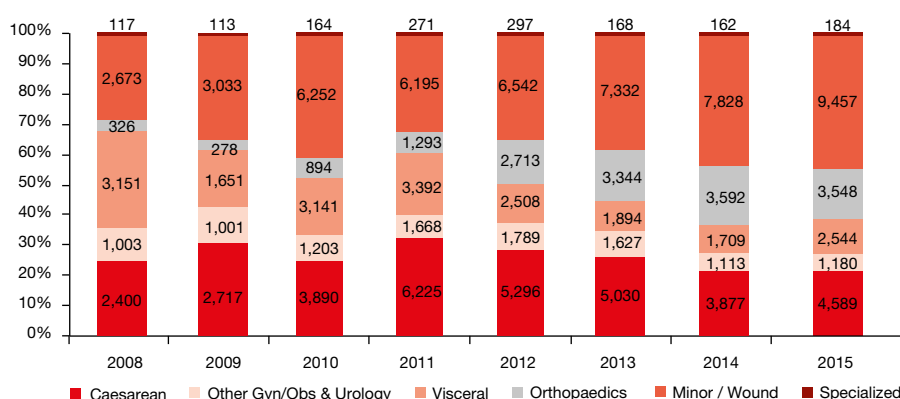
## 2.6. ORDER OF THE INTERVENTIONS

Surgical interventions can be performed as first/primary, planned re-intervention, and unplanned re-intervention. This indicator is important, as some projects can have a large volume of planned re-interventions, indirectly indicating the type of patients they are managing (e.g. wounded, burn victims). Unplanned re-interventions can be a quality indicator, as they represent post-operative complications of the surgical procedure that can be linked to professional performance (inadequate experience or skills), lack of medical materials and supply, unavailability of a post-operative recovery room, or lack of nursing follow-up of the patient in the hospitalisation ward.

In 2016, 59% of the interventions were primary interventions. This represents a decrease compared to the previous year (63%), reflecting the important proportions of surgery related to trauma, as these morbidities require several re-interventions during the treatment period.

## 2.7. INTRA-OPERATIVE MORTALITY

Out of the 22,958 entries into the OD of the 14 projects providing direct surgical activities, 46 intra-operative deaths were reported. This represents an overall mortality rate of 0.2% which is a slight decrease comparing to the previous year (0.3%) and the same as in 2014. Intra-operative deaths are defined as any death occurring between the induction of anaesthesia and the patient's discharge from the recovery room. While mortality

**Figure 3: Surgical procedures expressed in proportions, 2008-2016**

rates are reported per project, data should not be compared across programmes since intra-operative mortality is associated with patient condition, emergency status, indication for surgery, etc, and is thus a factor of the project objectives as well as the quality of care. Data can however be compared within projects over time to assess changes in their performance.

### 3. HUMAN RESOURCES AND TRAINING

Training is an important core activity in MSF and particularly for the OCB Surgery/orthopaedics, Anaesthesia/reanimation, Gynaecology/obstetrics, Emergency/intensive care (SAGE) unit. Specialist doctors such as surgeons and anaesthesiologists are scarce and those who are willing to operate in resource-limited settings are even more so. The different training schemes targeted different types of Gynaecology/Anaesthesia/Surgery (GAS) specialists, taking into consideration their skills and knowledge, and the expected skills and knowledge in relation to the operational strategies and needs. The trainings included:

- Training of expatriate surgeons in developing specific skills.
- Trauma and orthopaedic surgery: in OCB MSF GAS weeks (in Hong Kong and in Stockholm, Sweden) and in Op-

erational Centre Amsterdam (OCA) MSF Germany Surgical Workshop (in Dusseldorf, Germany).

- War surgery: International Committee of the Red Cross seminar (in Geneva, Switzerland).
- Training of national medical doctors performing surgery in developing specific skills.
- Basic orthopaedic surgery: in OCA MSF Germany Surgical Workshop (in Dusseldorf, Germany), and through bedside training with expatriate general surgeons.
- Advanced orthopaedic surgery: in OCB trauma centres through bedside training with expatriate orthopaedic surgeons.
- General surgery: bedside training with expatriate general surgeons.
- Advanced general surgery: in OCB trauma centres through bedside training with expatriate subspecialized surgeons (e.g. vascular, paediatric).
- Basic neurosurgery: in OCB trauma centres through bedside training with expatriate neurosurgeons.
- Obstetric surgery: bed side training with expatriate gynaeco-obstetricians.

- Management: in OCB MSF GAS weeks (in Hong Kong and in Stockholm, Sweden) and in the OCB Hospital Management Team Training (HMTT).
- Training of nurses in anaesthesia management.
- OCB MSF GAS weeks (in Hong Kong and in Stockholm, Sweden).
- Bed side training with expatriate anaesthesiologists.
- Specific training cycles.
- Haiti, Tabarre: specialized orthopaedic care and general surgery as a result of a joint venture with the Haitian University. This training consists of rotations of Haitian residents in orthopaedics and general surgery in Tabarre hospital.
- Advanced Life Support in Obstetrics (ALSO) done in several projects.
- Basic Assessment and Support in Intensive Care for Developing Healthcare Systems (BASIC-DHS) done in several projects.

### 4. OPERATIONAL RESEARCH

During 2016, the SAGE unit published eight peer-reviewed articles in scientific journals (see Annex Operational research & Documentation).

## 5. LOOKING BACK AND AHEAD

### 5.1. LESSONS LEARNED IN 2016

- Quality set-up of surgical care activities in emergency and violent settings. There was an important collaboration between the medical and operational department in the planning and set-up of new projects and in changing operational strategies.
- Some expatriates working in MSF field settings lacked technical skills, which in some cases was coupled with a lack of management and training skills, too.
- The high turnover of specialists posed a risk to the quality of surgical care.
- The need for specialists fluctuated without maintaining a critical mass in the field to keep efficiency in the pools.
- Obvious impact of the lack of briefings at headquarters of some GAS specialists as they might be not completely prepared for a challenging mission.
- There was a lack of appropriate data collection tools in large hospitals including surgery tools thus hindering the follow-up of quality of care. Moreover, almost all available indicators are quantitative and very few are qualitative outcome indicators. This hampers proper insight on process indicators.
- A satisfactory follow-up of performed surgical care activities was assured across all projects. Good communication was maintained between projects, missions and headquarters.
- There was an improvement in orthopaedic care in trauma centres with inclusion of new tools (e.g. implants) for more advanced orthopaedic management of fractures.
- Good data (statistics) was obtained in surgical care in compliance with OD databases and development of the hospitalisation one.

## 5.2. PROSPECTS FOR 2017

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- Seek support for more specialized activities: sexual and reproductive health activities by general surgeons, orthopaedic programmes, head trauma care (medical and surgical), end-of-life palliative care, thoracic and vascular surgery, burn care and wound management (including flaps).
- Increase the skills of expatriate and local specialists: orthopaedic surgeons in performing external and internal fixation; general surgeons in neuro-thoracic, vascular and plastic surgery.
- Set appropriate orthopaedics conservative treatment including state of the art plaster usage by general practitioners and/or general surgeons in hospitals run or assisted by MSF.
- Initiate new orthopaedic, anaesthesia and general surgery techniques and programs, refresh knowledge and skills. Also ensure proper distant follow-up by using telemedicine and including tele-education, tele-monitoring and tele-mentoring<sup>1</sup>.
- Follow up the quality of surgical care through postoperative site infections databases.
- Follow up the curriculum of all levels of national staff specialists when possible and available.
- Improve care for specific patient conditions such as head trauma, poly-trauma, burns.
- Ensure consistent and routine monitoring of activities like surgery/anaesthesia. Good quality indicators should be in place for the proper follow up and general improvement of OCB projects.
- Strengthen the response in cases of mass disaster through good coordination between all the actors including, emergency medicine doctors, anaesthetists, orthopaedic surgeons, other surgeons, nurses and logisticians.
- Continue publication of operational research studies.
- Continue to foster good collaboration within OCB and other sections as well as with other external platforms.

<sup>1</sup> Glinkowski W. The use of telemedicine for orthopaedics and traumatology of the musculoskeletal system. IHE. 2016. and Cota A, Tarchala M, Parent-Harvey C, Engel V, Berry G, Reindl R, et al. Review of 5.5 Years' Experience Using E-mail-Based Telemedicine to Deliver Orthopedic Care to Remote Communities. Telemed J E Health. 2017;23(1):37-40.

# TORTURE<sup>1</sup>

## AND OTHER FORMS OF ILL-TREATMENT

### 1. INTRODUCTION

Prior to 2013, limited experience on Victims of Torture (VoT) existed within Médecins Sans Frontières (MSF). While VoT were undoubtedly attending MSF consultations in many projects around the world, they were either not identified as VoT or the expertise was lacking to engage in the long term process of rehabilitation either the context was not allowing. In 2013, MSF started working on the rehabilitation of VoT, targeting the populations of VoT and other forms of ill-treatment. The case definitions are provided below.

Torture is defined as “any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purposes as obtaining from him/her or a third person information or a confession, punishing him/her for an act he/her or a third person has committed or is suspected of having committed, or intimidating or coercing him/her or a third person, or for any reason based on discrimination of any kind, when such pain or suffering is inflicted by or at the instigation of or with the consent or acquiescence of a public official or other person acting in an official capacity”<sup>2</sup>.

Ill-treatment, as defined by the International Committee of the Red Cross is not a legal term and it covers all following acts:

- Torture, consisting of severe pain or suffering, whether physical or mental, inflicted for such purposes as obtaining information or a confession, exerting pressure, intimidation or humiliation.
- Cruel or inhuman (synonymous terms) treatment, consisting of acts that cause serious pain or suffering, whether physical or mental, or which constitute a serious outrage upon individual dignity. Unlike torture, these acts do not need to be committed for a specific purpose.
- Humiliating or degrading (synonymous terms) treatment, consisting of acts that cause real and serious humiliation or a serious outrage upon human dignity, and whose intensity is such that any reasonable person would feel outraged.

### 2. PROGRAMME ACTIVITIES

#### 2.1. PROGRAMME SETUP

Currently, MSF-Operational Centre Brussels (OCB) runs three vertical out-patient clinics for rehabilitation of VoT, all targeted towards migrant VoT. We offer a comprehensive package of care through multidisciplinary teams composed of psychologists, medical doctors, cultural mediators, physiotherapists and social workers. Beneficiaries are referred to our centres by many actors who have been sensitised about our services but also as self-referrals. They undergo a first intake to understand if they match the inclusion criteria and if they do, a first assessment will be done to establish the treatment plan. We try to work in an interdisciplinary manner, discussing cases transversally between the different specialists and establishing a tailored

individual therapeutic plan when possible. Although the vast majority of consultations are individual, a recent innovation however is the use of group sessions for mental health and physiotherapy.

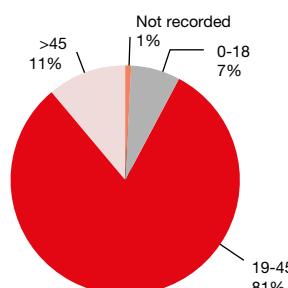
MSF teams benefit from the partnership with other organisations that have been involved in this field for many years. This guidance is essential as MSF develops its in-house

knowledge on VoT. Additionally, we have developed a network with other VoT centres, which is a useful platform to get advice and to discuss different ideas. Each of our projects is dependent on a local referral network to specialist care providers such as inpatient psychiatric care and advanced diagnostics. We are also able to offer legal support to our beneficiaries through partner organizations.

#### 2.2. PROGRAMME ACTIVITIES

In 2016, a total of 1,462 new VoT cases were admitted to MSF clinics, coming from more than 30 nationalities. While some having suffered torture in their home-countries, for others it was during transit. Our services are almost equally accessed by both male (55%) and female (45%) beneficiaries, over 80% whom are within the 19-45 age range and 7% are minors (<18 years) (Figure 1).

**Figure 1: Proportion of VoT clinic beneficiaries by age, MSF-OCB, 2016**



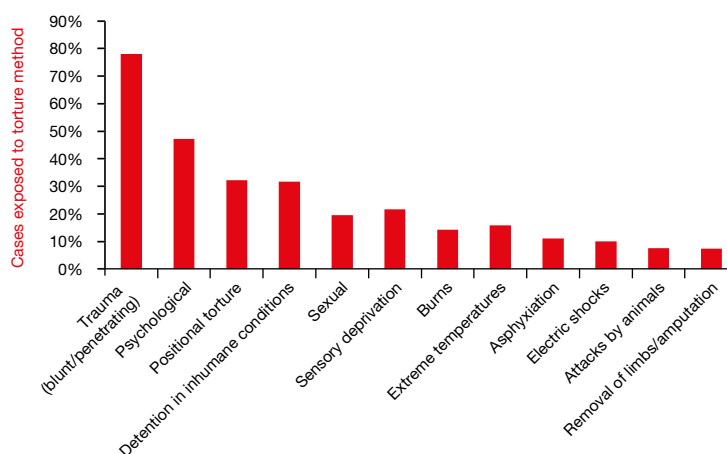
<sup>1</sup> As a matter of simplicity in this text we always use the word torture, but the target population in our projects are victims of torture and other forms of ill-treatment

<sup>2</sup> UN General Assembly, Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, 10 December 1984, United Nations, Treaty Series, vol. 1465, p. 85, available at: <http://www.refworld.org/docid/3ae6b3a94.html> [accessed 24 April 2017]

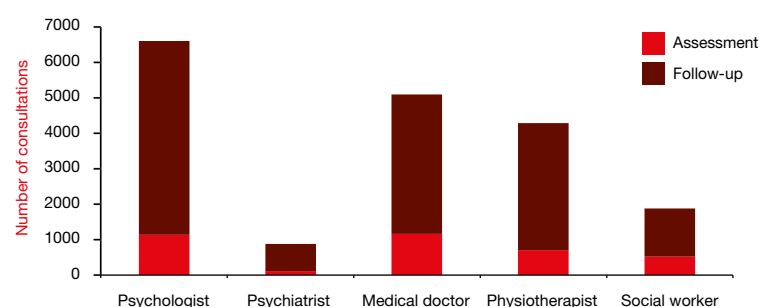
Figure 2 represents the distribution of methods of torture experienced by the victims. The most frequent was physical trauma, followed by psychological torture (including threats, forced witnessing of torture, forced practices against one's religion, and others), positional torture and detention in inhumane conditions. It is important to be cognisant that torture can be both physical and psychological. Many methods of torture do not leave physical marks; nevertheless the absence of physical evidence does not exclude the torture. Therefore it is extremely important to document thoroughly and precisely both the physical scars and the psychological evidence and produce a detailed medical and psychological certification.

Once the first assessment of the beneficiary is conducted, relevant departments take up the case in accordance to his/her specific needs. In 2016 our teams have performed a total of 18,745 individual consultations (Figure 3).

**Figure 2: Distribution of torture methods among beneficiaries in VoT clinics, MSF-OCB, 2016**



**Figure 3: Individual consultations in VoT clinics by department, MSF-OCB, 2016**



### 3. LOOKING BACK AND AHEAD

## 3.1 CHALLENGES IN 2016

- Torture rehabilitation is an extremely complex field, which is not only new to MSF, but also has many unanswered questions and dilemmas, even for actors who have been working in this field much longer.
- Despite the high number of new admissions, the capacity of the MSF-OCB clinics is unable to adequately respond to the large numbers of people in need. In populations fleeing wars, unstable contexts and exploitation, estimates are that up to 30% of people are victims of torture and other forms of ill treatment. While MSF clinics provide quality care for individuals, scalability of such care is a challenge.
- MSF teams, similarly to our partners, struggle to measure the impact of activities. Although torture itself is not a disease, but it does cause medical consequences. The diversity of these consequences precludes the use of a single defined outcome as a tool toward monitoring of programmes and individual patients. The holistic approach requires an interdisciplinary monitoring tool of outcome, which to date does not exist.
- There are difficulties in clearly defining the admission and exit criteria.
- In terms of data management, the multidisciplinary structure of the clinic, the complex system of internal and external referrals and follow-ups and the lack of clearly defined outcome measures, all place a considerable demand on the data management systems in the different projects. A relational database relying on EpiData software, has been developed in-house for VoT data management and one general and two site-specific trainings on its use have been conducted so far. Nevertheless, the complexity of both the software and the programmatic setup itself continue to challenge projects in assuming complete ownership of their data and analysis. Other options, such as switching to patient-centred data through e.g. an electronic medical record, may need to be explored.
- Data/information sharing about patients between professionals poses a challenge. Since our files are still paper-based, tracing all needed information is extremely time consuming and complicated when a beneficiary is followed up by several consultants. This too, may benefit from the introduction of an electronic medical record.



## 3.2 PROSPECTS FOR 2017

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It is of paramount importance to raise the awareness on torture within MSF and outside the organisation, starting from the other medical actors, including public health systems. Awareness on torture is extremely limited amongst the medical societies and humanitarian actors, thus if rehabilitation is to become accessible, then there is a need to contribute to sharing and development of knowledge. Regarding internal sharing of information, documents will be produced and internally disseminated amongst staff to enable them to recognize potential VoT and offer appropriate care, especially in settings where more comprehensive rehabilitation services are not accessible.

Given the magnitude of the problem, a single organization does not have the capacity to respond to the entirety of the needs, nor is this the objective of MSF. Therefore, we definitely need to scale up our advocacy dedicated to this particular thematic.

Regarding the MSF projects already running, in 2017 the teams will work on capitalizing their experiences and will also develop operational research plans to contribute to the scientific knowledge on rehabilitation. Specific attention will be placed on clarifying as much as possible the entry criteria and the disclosure process, indicators to follow up the outcome and in a subsequent phase define the exit criteria. Platforms to share research output in contexts where publication may not be possible, due to political constraints will be developed.

From a larger perspective the organization will need to reflect on further, if any, investments that we could do on the thematic of torture in different operational contexts.

# VACCINATION

## 1. OVERVIEW

The year 2016, saw major increase in activity in the field of vaccination in Médecins Sans Frontières-Operational Centre Brussels (MSF-OCB). One major multi-antigen mass vaccination campaign in three rounds was successfully organized in Central African Republic (CAR) and launched with the support of the Mobile Implementation Officer (MIO) vaccination. Five reactive mass vaccinations in the Democratic Republic of Congo (DRC) were organized in 2016, four of which were to respond to measles epidemic and one to a yellow fever epidemic. Nine preventive mass vaccination campaigns were launched over the same period of time in six countries and three continents. Five of these campaigns were multi-antigens campaigns and three out of them were conducted in several rounds.

The number of vaccines supplied for field activities in 2016 reached 438,000 doses. Two thirds of the vaccine estimated budget for field activities (€ 440,200 out of € 680,900) was allocated to immunoglobulins and vaccines used as post-exposure prophylaxis, even though these products represented only 2% of the doses given in MSF programs.

The number of vaccinations given against pneumococcus kept increasing slowly in OCB projects, showing a promising trend. Human Papilloma Virus (HPV) vaccination and vaccination of People Living with HIV (PLHIV) remains a challenge to be tackled.

## 2. PROGRAMME ACTIVITIES

Out of the 74 projects with medical activities developed by OCB in 2016, 33 of them reported vaccination activities (45%). A total of 2,389,242 doses of vaccine were administered with the concurrence of MSF in these projects, more than doubling the number of doses administered the previous years (1,170,508 in 2015 and 1,052,089 doses in 2014). This sharp increase is mostly linked to massive vaccination campaigns following the yellow fever epidemic in DRC (1,083,433 persons vaccinated), to the launch of a multi-antigens catch-up vaccination campaign in CAR, and to the better reporting of post-exposure prophylaxis throughout the projects.

More than one fourth of the doses (28%) were given in reactive mass vaccination campaigns and almost half of them (45%) were given in preventive mass vaccination campaigns. The remaining 26% of the doses were given in routine vaccination (and like in 2015, 84% of these doses targeted children <5 years old) while 2% of the doses were used for post-exposure prophylaxis.

An estimated total of € 680,900 was spent on the supply of vaccines and vaccine products for all OCB missions in 2016. Note that most vaccines used during vaccination

**Table 1: Distribution of doses administered by type of activity, 2016**

	Doses	%
<b>Total doses routine vaccination</b>	613,547	26%
<b>Total doses in response to epidemics</b>	664,929	28%
<b>Total doses preventive campaigns</b>	1,063,566	45%
<b>Total doses post-exposure prophylaxis*</b>	47,200	2%
<b>Total doses administered</b>	<b>2,389,242</b>	

\* Immunoglobulin doses for tetanus and rabies are part of the post-exposure prophylaxis protocols

campaigns (reactive and preventive) as well as vaccines given routinely to <12 months old children were supplied through other procurement systems in place such as the Ministry of Health (MoH) / United Nations Children's Fund (UNICEF), International Co-ordination Group on vaccine provision (ICG) and Global Task Force for Cholera Control (GTFCC). Immunoglobulins represented 62% of the vaccine products expenditures (43% in 2015), while tetanus vaccine represented 7% of this budget. An overview of the doses administered over the course of 2016 is provided in Table 1.

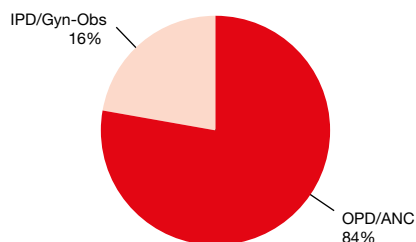
### 2.1. ROUTINE VACCINATION

A total of 613,547 routine vaccinations were administered in OCB projects over the course of 2016 (Figure 1), representing a 13.2% increase compared to 2015 (541,795

doses). Three quarters of these doses (77%) were reportedly given in Out-Patient Department (OPD) 373,369 doses, in Antenatal Care (ANC) 95,657 doses, while the remaining quarter of the routine doses were given through the In-patient Department (IPD) or Gynaecology/Obstetric wards (144,097 doses). Only 424 vaccinations were reported through the nutrition programmes, which admitted 826 children <5 years in 2016. However, it is believed that vaccinations are often provided to these children through the nutrition programme but are reported in OPD.

None of the 156 children reportedly being born in Prevention of Mother to Child Transmission (PMTCT) programmes supported by MSF have had vaccination reported through the HIV programme. Hopefully, these children are referred to a functional vaccination

**Figure 1: Distribution of routine vaccinations in OCB programmes, 2016 (n=613,547)**



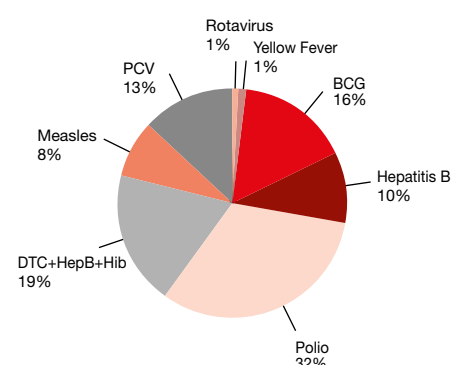
programme elsewhere and their vaccination status is checked during their follow-up visits.

Similar to the two previous years, 84% (517,890) of the vaccine doses given were routinely administered to children less than five years of age. Only 11% of them (56,755 doses) were given to children above 11 months of age, showing only a small increase compared to 8% in 2015. The need to catch-up children who have missed vaccination through the Extended Programmes on Immunisation (EPI) is real in all countries where MSF works and emphasis should be put on increasing the age of vaccination to reach these children by all means in all MSF-supported projects.

Polio vaccine represented a third (32%) of the doses administered to children under five in routine vaccination in 2016 (Figure 2). About one fifth (19%) of the doses given combined five antigens in one vaccine, i.e. Diphtheria, Tetanus, Pertussis, Hepatitis B and Haemophilus influenzae b (DTP-HepB-Hib), while Bacille Calmette-Guérin (BCG) accounted for another 16% of the doses distributed. Measles containing vaccines and single Hepatitis B vaccines represented 8% and 10% respectively. This distribution is comparable to last year's distribution.

Pneumococcal vaccines (PCV) doses given routinely to children under 5 years of age increased from 11% in 2015 to 13% in 2016, representing a 30% increase (and steady

**Figure 2: Distribution of antigens administered to children <5 in routine vaccination in OCB programmes, 2016 (n= 517,890)**



**Table 2: Post-exposure prophylaxis vaccines in OCB projects, 2016**

Type of victims	Vaccine	Doses	%
Wounded	Tetanus	30,471	65%
	Tetanus Ig	11,380	24%
SGBV	Tetanus	846	2%
	Hepatitis B	1553	3%
Suspected bites	Rabies	2840	6%
	Rabies Ig	110	0%

**SGBV: Sexual and Gender-Based Violence**

over years) in the total number of doses given (69,817 doses).

Like previous years, the drop-out rates from first to third doses of polio and pentavalent vaccines were around 25%. In 2016, vaccination of new-borns (Oral Polio Vaccine (OPV) and Hepatitis B (at birth) represented 23% of the doses administered routinely to children <5 years of age. According to the reporting, 70.5% of the 69,532 children born in MSF structures received one dose of Hepatitis B vaccination at birth (49,048 doses) and 99.6% of them received their first dose of polio vaccination (69,266 doses). This reflects a better application of the recommended vaccination protocols as well as a better reporting of the new-born vaccinations in MSF programmes. Efforts to keep increasing the proportion of children receiving their first dose of Hepatitis B vaccination as soon as possible after birth should be encouraged in all missions.

In 2016, three quarters of the 95,657 doses of tetanus vaccines delivered to women in reproductive age were administered to pregnant women. Six out of ten doses were recorded as a first dose, and two out of ten as second

dose. Around 5% of the women (4,624) are recorded to have received their 5th doses of tetanus vaccination through our programmes and are hence protected for life against tetanus.

## 2.2. POST-EXPOSURE PROPHYLAXIS

Over the year, 47,200 doses of vaccines and vaccine products were used for Post-Exposure Prophylaxis (PEP) in MSF-OCB projects (Table 2).

The overwhelming majority of rabies vaccinations reported in 2016 were recorded in a single project in Pakistan. This leaves us with the suspicion that this fatal disease in unvaccinated persons still remains underestimated and improperly managed in our programmes in the other countries.

## 2.3. EVALUATION OF MISSED OPPORTUNITIES FOR VACCINATION (MOV)

New evaluations were conducted in CAR, Mauritania and DRC. It has to be noted that to the exception of the ones done in CAR by the MIO-Vaccination, all evaluations were initiated and realized by the field teams following the MIO's advice (Table 3).

**Table 3: Evaluations of missed opportunities for vaccination in OCB projects, 2016**

Country	Structure	Date	Target	n	MOV in eligible	MOV
CAR Castor	CDS	Mar-16	0-11 months	143	29%	10%
CAR Castor	CDS	Mar-16	12-24 months	18	100%	22%
CAR Mpoko	CDS	Mar-16	0-11 months	84	52%	19%
CAR Mpoko	CDS	Mar-16	12-48 months	89	100%	18%
Mauritania Mberra	CDS	Nov-16	0-11 months	39	61%	28%
Mauritania Mberra	CDS	Nov-16	12-59 months	49	78%	14%
DRC Masisi	HGR	Dec-16	0-59 months	80	NA	24%
DRC Masisi	HGR	Dec-16	Pregnant women	70	NA	31%
DRC Masisi	CS	Dec-16	0-59 months	75	NA	44%
DRC Masisi	CS	Dec-16	Pregnant women	75	NA	19%
DRC Nyabiondo	CSR	Dec-16	0-59 months	80	NA	20%
DRC Nyabiondo	CSR	Dec-16	Pregnant women	70	NA	30%

**MOV in eligible:** proportion of eligible individuals exiting a health structure who have just missed an opportunity of being vaccinated (measure the performance of the system at detecting and vaccinating eligible children); **MOV:** proportion of individuals exiting a health structure who have just missed an opportunity of being vaccinated; **PS:** Health post; **CDS:** Health Centre.

## 2.4. MASS VACCINATION CAMPAIGNS

In 2016, OCB organized or supported nine preventive mass vaccination campaigns in CAR (2), Madagascar (1), DRC (2), Haiti (1), Greece (2) and Niger (1). A total of 1,063,566 doses of vaccines were given. Five of the organized campaigns used more than 2 vaccines (multi-antigens) and two of them (CAR and Madagascar) were done in successive rounds. The remaining four campaigns (meningitis, yellow fever 1/5th dose, cholera or measles), used a single antigen.

In 2016, OCB organized five reactive mass vaccination campaigns in response to epidemics, all of them in DRC. A total of 664,929 doses of vaccines were used for this purpose, of which 56% (373,054 full doses) were against yellow fever and 44% (291,875 doses) against measles.

## 2.5. VACCINATION COVERAGE SURVEYS

Vaccination coverage surveys were organised after the campaigns in DRC (6 out of 7 campaigns), CAR (2 out of 2) (Table 4). The vaccination coverage studies in Bikenge

were conducted by Epicentre and were coupled with a vaccine effectiveness study.

## 3. FIELD VISITS

Field support visits were paid by the vaccination advisors to DRC (yellow fever and workshop), Turkey (Syria routine vaccination programme) and Haiti (cholera vaccination), and by the MIO-Vaccination to CAR (start of the multi-antigen campaign, MOVs and support to routine vaccination).

## 4. DEVELOPMENTS AND INNOVATION

The E-tool (JennerX) for the follow-up of multi-antigens vaccination campaigns in multiple rounds has been pilot-tested during two rounds of the campaign in CAR. Several changes were made after the piloting that showed very promising results. JennerX needs to be tested further on a full scale campaign (3 rounds) to really measure its added value.

## 5. TRAININGS/CONFERENCES/ MEETINGS

- OCB vaccination advisors gave support to the Populations in Precarious Situations

(PSP) and Response to Epidemics international courses. Vaccination modules were also taught during the OCB Health Promotion training (1), the E-pool workshop and in the First Line Medical Trainings (2), the Basic Logistics Course (BLoC) as well as in the Institute of Tropical Medicine in Antwerp (ITM) course.

- A three-day training on the use of EPI-Info 7 was initiated and organized by the vaccination referent for 23 participants from the OCB medical department. A follow-up course and the development of a simple training module (step by step) should be envisaged.
- JennerX was presented by the IT developer in the Innovation Pitch session of the MSF Scientific Day in London: "Ensuring Good Vaccination Practice, there is an App for that!".
- The advisors participated to the Preparedness to Epidemics (intersection meeting), to the Hepatitis E meeting, to the Vaccination Working Group (VWG) meetings, to the HIV VWG meeting and to the April Strategic Advisory Group (SAGE) meeting.

Table 4: Results of vaccination coverage surveys post-vaccination, OCB 2016

Country/Project	Antigen	Date	Target pop (ex <5y)	Coverage
DRC Sarambila	Measles	mai-16	6 months - 15 years	99,7%
DRC Matadi	Yellow fever	juin-16	>9 months	95,2%
DRC Biyela (Kinshasa)	Yellow fever full dose / 1/5 dose	août-16	9-23 months&pregnant / >23 months	96,8%
DRC Kikimi (Kinshasa)	Yellow fever full dose / 1/5 dose	août-16	9-23 months&pregnant / >23 months	95,5%
DRC Kingasani (Kinshasa)	Yellow fever full dose / 1/5 dose	août-16	9-23 months&pregnant / >23 months	98,5%
CAR Bangassou (urban)	DTP-Hib-HepB, Polio	nov-16	0-59 months	Polio3/Penta3 57.9%
CAR Bangassou (urban)	Measles	nov-16	0-59 months	96,1%
CAR Bangassou (urban)	PCV 12-23 months	nov-16	12-23 months	75,2%
CAR Bakouma/Nzacko (rural)	DTP-Hib-HepB, Polio	nov-16	0-59 months	Polio3/Penta3 71%
CAR Bakouma/Nzacko (rural)	Measles	nov-16	0-59 months	99,3%
CAR Bakouma/Nzacko (rural)	PCV 12-23 months	nov-16	12-23 months	87,4%
DRC Adi	Measles	nov-16	6 months - 15 years	97,6%
DRC Bikenge urban	Measles	nov-16	6 months - 15 years	94,3%
DRC Bikenge other ADS	Measles	nov-16	6 months - 15 years	97,5%
DRC Kindu	Measles	déc-16	6 months - 15 years	97,3%

Vaccination coverage estimates include previous vaccinations (not only target reached by the campaign)

# 6.1. CHALLENGES AND ACHIEVEMENTS IN 2016

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- After an unfortunate very short bad matching, the position of International Vaccination Focal Point in DRC was finally filled in mid-year and greatly improved the relationship with the national EPI authorities. Full support for the success of this position was ensured by the OCB vaccination referent.
- The switch from trivalent Oral Polio Vaccine (tOPV) to bivalent Oral Polio Vaccine (bOPV) was successfully organized in all OCB missions and tOPV stocks were destroyed following the MSF-Water, Sanitation and Hygiene or national guidelines.
- Since February and under extremely difficult conditions, OCB has successfully managed to organize vaccination activities in Northern Syria through distant support and supervision.
- As part of an intersection effort to catch-up on vaccination coverage in CAR after several years of instability, the first OCB multi-antigens mass vaccination campaign in multiple rounds was successfully organized in Bangassou, CAR.
- Despite important logistics challenges linked to working in Europe, the concerted efforts and commitment of the field teams resulted into the organisation of a multi-antigen mass vaccination campaign for the migrants in Greece.
- The vaccination protocol for asplenic patients was finalized and proposed for validation by the VWG.
- The MIO vaccination position was cancelled in May to allow for evaluation and adjustments of the post. It was not filled in for the rest of the year.

## 6.2. PROSPECTS FOR 2017

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- Continue to provide close support to the field through a MIO position and regular field visits from the advisors.
- A tool box for implementation and evaluation of routine vaccination should be developed, promoted and distributed to all missions.
- Keep focus on increasing the age for vaccination up to 59 months in every project and pay special attention to vaccination of children <11 months. Multi-antigen catch-up campaigns should be envisaged as a solution wherever appropriate.
- Promote the use of the framework for preventive vaccination in emergencies to decide on which antigens to use according to an in-depth analysis of the situation.
- Improve the use and reporting of anti-rabies and other immunoglobulins in all missions in order to treat our patients better and increase MSF's accountability towards the use of these very expensive but effective products.
- Provide better support to HIV projects to improve attitude towards vaccination of PLHIV.
- Increase publication of the results of several studies: "coup de poing" strategy, Missed Opportunities for Vaccination and Vaccine Effectiveness in DRC.



# WATER, HYGIENE AND SANITATION

## 1. OVERVIEW

The overarching operational prospects reinforced in 2016 show the clear commitment of Médecins Sans Frontières (MSF) to increase the activities and her role in the field of Water, Hygiene and Sanitation (WASH). The crucial and enabling role of the WASH expertise during the MSF work on Ebola in West Africa in 2014 triggered such determination to reinvigorate the WASH reflex and increase the scope of this process. The “Where is everyone” review in 2015 of the humanitarian aid system response in displacement of populations reinforced intention to salvage the WASH activities in the MSF movement.

The global increasing Antimicrobial Resistance (AMR) underscores the importance of implementing correctly the essential water and sanitation requirements in MSF supported health structures to avoid further hospital acquired infections. Non-compliance was scanned for and defaulters tackled in all missions in order to create a safe environment for patients, staff and accompagnants.

Outside of health structures and during emergencies a better balance was struck in some missions between the attention given to curative care and the emphasis given to preventive WASH activities. Attention was given to improve the rapid surge capacity in acute emergency and the will to develop a more exit-oriented strategy making place from the start for other actors to step in during a second phase. This requires the use of different kits from the onset to increase technicality without reducing flexibility, such as: groundwater exploitation in addition to the costly water trucking, strengthening of links with epidemiologists and Geographic Information System (GIS) officers to be able to better target the environmental determinants of diseases in hotspots of transmission and cut the transmission routes of infectious diseases (e.g. Cholera, Ebola) in the affected communities.

Rural projects in Mauretania and Central African Republic (CAR) and urban WASH pilot projects in Haiti and Zimbabwe were launched and require the will to increase the proximity with populations as prevention only works if the appropriate WASH and Vector Control (VC) tools are co-opted into the daily routine of the population at risk. As the world population is increasingly becoming urban, an organisation like MSF needs additional tools and experience to implement its mandate in these complex urban environments. The Ebola experience in Monrovia clearly revealed that MSF, like all other humanitarian actors, only find themselves, at best halfway, on this steep learning curve.

In practice focus was on improved implementation of good WASH practices in all MSF-supported infrastructures, on default WASH involvement in emergencies, and on two to three rural and urban pilot projects in contexts of recurrent health risk or within projects by choice where operational research, innovation and advocacy opportunities will be capitalised. To achieve this surge, the WASH Human Resources (HR) pool was reinforced on the field as well as Head Quarters (HQ) level.

The intersectional WASH working group continued to serve as an expedient platform for development and dissemination of tools and guidelines and for harmonizing intersectional WASH activities.

## 2. PROGRAMME ACTIVITIES

### 2.1. ACTIVITIES AT COUNTRY AND PROJECT LEVEL

All of Operational Centre Brussels' (OCB) projects include a WASH component to minimise hospital-acquired infections and optimise infection control. A systematic scanning of WASH needs was performed for all OCB projects. Therefore, WASH support

was provided to established missions to ensure that the essential WASH requirements in the medical infrastructures were respected. Trained WASH personnel from the pool were sent to the field if the WASH needs proved to be (1) technically complex or (2) of a too large scale and time demanding for the field staff. WASH needs in the large OCB emergency interventions were mainly addressed by specialised staff with technical support from HQ. In 2016, about 64 WASH experts

supported projects in the following countries: Afghanistan, Balkan, Ukraine, migration missions, Mauretania, Nigeria, Malawi, Sudan, South Sudan, Venezuela, CAR, Democratic Republic of Congo (DRC), Burundi, Haiti, Zimbabwe, and Pakistan. The WASH Unit also participated in multiple international and MSF internal as well as external meetings.

## 2.2. SPECIFIC WASH INTERVENTIONS AND FIELD VISITS

- The yellow fever outbreak in DRC was a significant challenge and required considerable WASH support to manage the vaccination of 800,000 people, but more importantly to define appropriate prevention VC activities. The regular projects in Kinshasa, Masisi, Bikenge and Bili, as well as the Pool d'Urgence Congo (PUC) project continued to require a particular WASH focus to support the numerous medical infrastructures and training of the dispersed staff.
- The London School of Hygiene & Tropical Medicine (LSHTM) provided support to MSF assessing the possibility to support on Malaria control in Gitega/Mutaho region in Burundi. WASH Support was required as well to support the cholera outbreak in Bujumbura and Cholera Treatment Centre (CTC) in Prince Regent Hospital and this was in addition to the Project surgery in Buja (L'Arche).
- The WASH Unit was also involved in an exploration mission in support of developing WASH activities in south east, Onitsha slum in Nigeria. Avenues for projects are still being developed.
- In South Sudan context (Pibor, Gogrial, Bor and Doro), an emergency WASH support was provided in the medical infrastructures and the Gapték project construction in Doro. The malaria burden in Doro camp and Buni host population is excruciating. Sub-optimal support to the Buni host population resulted in increased burden of communicable diseases inside the MSF medical infrastructures. However, significant efforts in 2016 were made to prepare for a timely malaria VC project in Buni host community before the transmission season in 2017.
- The MSF support to migrants in Greece, the Balkans, Italy, Turkey and Egypt necessitated involvement of WASH expertise for migrants in transit/detention/reception centres or spontaneous settlements and mobile clinics as well as for WASH Emergency Preparedness (EPREP) for potential new influx in Greece. In 2016 a significant WASH effort was provided equally to the MSF team in Serbia who supported thousands of migrants and asylum seekers crossing the country on their way to Northern Europe. The cold winter however posed important constraints on the

construction and renovation of toilet and shower facilities.

- The entomologist of the WASH Unit provided support to another section for refugee population that migrated from the highlands in Burundi, through the malaria prone lowlands, into the Tanzania refugee camps where malaria rapidly became the major health project. A pragmatic VC campaign was defined and implemented.
- The security situation in Mauretania remains challenging but WASH support to the Health Centre and refugees in Fassala was assured and new community-based water access project was launched in Barkeol area. The specific activity was developing and maintaining an iron removal unit in Fassala and to increase access to water among vulnerable rural communities in Barkeol.
- In Afghanistan (Kabul, Lashkargah, Kunduz, Khost, Ahmad Shah Baba) WASH support was provided to ensure the essential WASH requirements in health structures, support the definition of the EPREP strategy and follow-up on the issues of contamination of water with chemicals.
- In CAR, the Bangui and Bangassou projects required significant WASH involvement especially to develop the community driven approach adopted by the mission to tackle "the main killer diseases" in the region. This required support to develop both a community water access campaign and a malaria VC strategy. Follow-up of these activities with the support of LuxOR and the LSHTM was developed to monitor the health impact of these improvements.
- Haiti required a lot of WASH support in 2016 given the profound devastation hurricane Matthew brought about in this cholera prone context. Work continued in Tabarre hospital where the waste water generated is treated with the RBC and the water quality requires follow-up given the previous pseudomonas contamination. The Martissant community project targeting arboviruses and cholera prevention has been developed and started its activities.
- The population in Harare (Zimbabwe) is at risk of water-related outbreaks like typhoid fever and cholera. WASH is the heart of the intervention and is integrated in diagnosing and rehabilitating existing boreholes and detailed mapping of the hydrogeologi-

cal situation in order to point out potential sources of groundwater contamination. A comprehensive public health study will investigate the correlation between the occurrence of the recurrent diseases and possible hotspots of transmission which will require further intervention.

- WASH support is provided to the Timurgara and Karachi project in Pakistan. More specifically a Leishmaniosis response has been defined and implemented with support of the LSHTM.
- The MSF mission in Venezuela opened in Sifontes, Bolivar, a project completely focused on malaria. WASH supported in identifying the target population and the strategy to implement for population based VC activities.
- A regional WASH position was created to address the medical waste management particularly around correct management of viral load, expired drugs and hazardous waste in Malawi, Zimbabwe and Mozambique. This includes an in-depth investigation for high-temperature incineration for hazardous waste.

## 3. INTERNATIONAL COHERENCE

The intersectional working group on WASH has been active since 2007 and aims to improve the intersectional coherence on WASH issues. Over the course of 2016, activities of the WASH working group included:

- Four meetings of the working group whose minutes and presentations are disseminated through Tukul.
- An intersection draft policy paper was sent around for feedback for better cohesion on WASH between different sections.
- Finalisation and working group greenlight on International Reference Field Function Grid (IRFFG) review between sections and finalisation of key job descriptions.
- A 5 days' workshop on Vector Control presenting new tools was organized in Entebbe, Uganda that was open to medical and WASH profiles in MSF.
- Systematic updates of the WASH working group space on Tukul, including technical documents, digital maps, and presentations and meeting minutes.

### 3.1. DOCUMENTS AND GUIDELINES

The WASH Unit, in close collaboration with the intersectional working group, was in-

volved in the generation of a broad array of documents and guidelines such as:

- The “Public Health Engineer” which has been translated in French and is available as the “Technicien Sanitaire”.
- A follow up to the “Where is everyone – responding to emergencies in the most difficult places” was launched in 2016 for presentation to the medops in 2017. This study will focus on “A review of MSF’s water and sanitation approach in the context of the wider humanitarian aid system” and look at the place of WASH in MSF and its place in the wider humanitarian architecture.
- Several technical updates/files were implemented in the International Technical Coordination (ITC) catalogue in close collaboration with the international office.

## 3.2. STRATEGIES AND TOOLS

A position paper advocating for the implementation of preventive tools such as Long Lasting Insecticide Treated Nets (LLIN) was developed in collaboration with the Malaria Working Group. This was in response, to the emerging resistance to pyrethroids and the recommendation to switch to more effective Piperonyl Butoxide (PBO) treated bed-nets as a transitory measure until new generation bed nets become available probably in 2017.

WASH was also involved in a task force formulating a response to a highly contagious airborne diseases in order to be ready with appropriate scenarios should such a problem occur.

In CAR an innovative manual drilling technique was adopted to realize safe water points in areas with difficult access through involvement of the beneficiary population. The use of insecticide treated eave tubes in combination with house improvement aims to reduce the malaria burden. Combined water access and VC strategies were defined

as the backbone of the WASH/Public Health activities in Cell 1 and concretised into project proposals for CAR, DRC, South Sudan and Guinea.

In Haiti an interesting new “Auto-Dissemination” approach was tried out, which is a completely novel Concept to Fight Aedes in Urban Areas.

## 3.3. OPERATIONAL RESEARCH

The close collaboration with the Operational Research Unit (LuxOR) enabled the WASH working group to launch a considerable number of operational research initiatives that will be ready for submission in 2017.

## 3.4. COMMUNICATION

MSF experience in WASH activities was actively shared at multiple platforms through scientific presentations and discussions including:

- Participation to Wash in Health Care settings (WHO meeting in collaboration with LSHTM)
- Humanitarian Innovation Fund meeting in London
- Wash cluster meeting and organization and participation in the Emergency Environmental Health Forum in Katmandu
- World health Organization (WHO) Hepatitis E meeting in Geneva
- Geneva United Nations Development Program (UNDP) & MSF Workshop (2 days) on Hazardous waste.

## 4. HUMAN RESOURCES & TRAINING

To achieve this surge, experienced WASH coordinators were assigned more frequently to relevant countries. The WASH Unit was reinforced to augment proximity to emergencies and to deal with the expected increased load of recruitment, pool management and formation that the increased investment in

WASH will generate. An experienced entomologist joined the WASH Unit in order to provide technical expertise on disease risk mitigation through VC. A WASH person was re-assigned to work in the newly created health structure Unit in the medical department. HQ-based WASH support was provided to the logistical department in the development of the prefabricated Gaptek health structure build-up in the training site as well as in Doro, South Sudan. Specific support was in collaboration with LuxOR and an agreement was signed between the WASH Unit and the prestigious LSHTM to reinforce the evidence base on impact of WASH activities on the health of the populations.

The WASH Unit was involved in over 55 full-time days of dedicated trainings – including the WASH module of the Populations in Precarious Situations (PSP) training, the WASH in Emergencies training (English and French), the Response to Epidemics (REPEPI) course and the Water, Engineering and Development Centre course – as well as providing WASH components for trainings such as the preparation for Primary Departure (PPD) course, Management of Health Structures (MHS) course, Basic Logistics Course (BLoC), and others trainings (TLB, LTT, MMC, PMC).

A brand new 5 days training on the new and innovative tools in VC was developed. Intense 8 days WASH trainings were provided to the DRC and CAR mission to strengthen WASH knowledge and practices for the national staff in key positions.

In addition, the WASH Unit also provided external training to a number of public health masters students in international centres such as the Liverpool School of Public Health, the Institute for Tropical Medicine in Antwerp (2 complete new modules), Bioforce WASH. The WASH Unit also intervened during the Pharma week in Geneva.

## 5. LOOKING BACK AND AHEAD

### 5.1. LESSONS LEARNED IN 2016

- It was important to formalize the clear ambition to increase the visibility of WASH in the MSF movement in 2016 into a concrete plan for growth of WASH field as well as HQ support.
- An increased number of operational research studies focusing on WASH have been launched but further follow-up is needed for publication in peer reviewed journals and translation into policy. This can be improved through further collaboration with academic institutes and in close collaboration with LuxOR.

- It was important to assign WASH coordinators to the field to boost the WASH activities both in the technologies involved and in community-based prevention programs.
- It was very important to boost the support the WASH Unit could provide to operations, both in terms of first line or strategic advisors (e.g. developing pilots WASH projects, emergencies, HR focal point) and in terms of more sophisticated technologies (e.g. VC, health facilities and ground water).
- It was crucial to further develop the expertise on how to address medical waste management issues, correct management of viral load, expired drugs and hazardous waste.
- The intersectional working group continued to demonstrate its worth and has managed to harmonise the WASH activities of the different sections. A website that is not password protected would be interesting to share information.
- The need for an intersectional Water, Hygiene and Sanitation Policy Paper is required and requested by the medical directors.

## PROSPECTS FOR 2017

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- The emergency strategy to be expanded with increased focus on WASH (e.g. drilling machine) to enable broadening of WASH activities in emergencies and in water supply projects for communities.
- Management lines of WASH HR in the field need to be coherent with the overall objectives. Streamlining the set-up will also contribute greatly to re-establish the harmony with the logistics department. Additionally, operational targets and process indicators need to be defined.
- A WASH-IT course will be developed based on the Structured Operational Research and Training Initiative (SORT-IT) model in collaboration with LuxOR so as to capitalise on MSF's opportunities and further upgrade the evidence base in the WASH sector.
- A platform where NGO's involved in emergency VC activities can exchange information and lobby for more appropriate tools for these specific populations needs to be created.
- The high level of technical support in the field towards all WASH issues will be maintained, and the systematic scanning of WASH needs in projects, feeding into the Annual Review of Operations process, will continue. Particular attention will be devoted to improve information flow between headquarters and the field, improve knowledge and skills both at headquarters and field levels through intersectional WASH trainings, and further roll-out of innovative tools. Additionally, the Unit will attempt to influence the WASH agenda and strategies of other actors in the field through increased sharing of the MSF experience through different communication channels (including conferences, peer-reviewed literature, etc.).

MSF - OPERATIONAL CENTRE BRUSSELS - **MEDICAL DEPARTMENT**

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# **OCB MEDICAL ACTIVITY**

## **ANNEX OF TABLES AND DATA**

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**MSF-OCB - BELGIUM - BRAZIL - DENMARK - HONG KONG - ITALY - LUXEMBOURG -  
NORWAY - SOUTH AFRICA - SWEDEN**



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# SECTION 11:

## HEALTH PROMOTION AND SOCIO-ANTHROPOLOGY

**TABLE 1:** OCB interventions for migrants with HP activities, 2016

(Started as an emergency, became a task-force and ended under Cell 2 dedicated for migration, except the destination countries which are still under the Emergency Unit)

Country	Migration in 2016	Type of HP activities
<b>Destination Countries</b>	Belgium	- Promotion of MSF services & MSF identity
	Norway	- Continuous cultural assessment of the context
	Sweden	- Provision of information (geography, itinerary, border situations, regulations, etc.) - Health and Hygiene Promotion
<b>Greece</b>	Idomeni	- Promotion of MSF services & MSF identity
	Kos-Leros	- Continuous cultural assessment of the context
	Lesbos	- Provision of information (geography, itinerary, border situations, regulations, etc.) - Health and Hygiene Promotion - Distribution of Non Food Items - Social Mobilisation for vaccination campaign - Any other support to all departments - Psychological First Aid support
	Thessaloniki	- Provision of information (geography, itinerary, border situations, regulations, etc.)
<b>Serbia</b>	Kelebija & Horgos	- Hygiene Promotion related to primary health care (training and production of HP material)
<b>Turkey</b>	Hatay	- Continuous cultural assessment of the context - Partnership with local organisation - Distribution of Non Food Items - Health information on various topics

**TABLE 2:** OCB emergency interventions with HP activities, 2016

Country	Emergency in 2016	Type of HP activities
<b>Haiti</b>	Port à Piment	- Promotion of MSF services & MSF identity - Community engagement through "Col Vol", network for surveillance & reference - Hygiene promotion activities (including cholera) - Social mobilisation for cholera vaccination
	Jérémie	- Promotion of MSF service & MSF identity - Screening malnutrition & malaria surveillance - Distribution of Non Food Items - Hygiene promotion activities - Community engagement through networking with different actors & mobile clinics
<b>Madagascar</b>	Ambovombe	- Nutrition surveillance in the community - Community mobilisation for mobile clinics - Health education sessions on nutrition, vaccination, tuberculosis & typhoid fever - Adherence support for ATFC clients
<b>Nigeria</b>	Onistha	- Qualitative assessment of the water, sanitation and hygiene situation in the slum of Okpoko
<b>Democratic Republic of Congo</b>	Kinshasa-Yellow Fever	- Collaboration with provincial & national level with MoH for the development of the HP strategy - Social mobilization & awareness campaign
	Vaccination	- Origin of patient follow up
	Kinshasa-Yellow Fever	- Community based awareness campaign on yellow fever - Health education session in health structures
	Vector control & Disease management	- Evaluation of HP strategy (survey)
	Matadi - Yellow Fever	- Community mobilization for vaccination & for vector control activities - Support to the preparation of the sites of intervention - Participation to the entomological study at the end of the intervention

**Table 3:** OCB projects with HP/anthropological activities, 2016

Country	Project	Key activities in 2016
<b>Afghanistan</b>	Helmand (OCA)	<ul style="list-style-type: none"> <li>- Health education on all relevant medical topics in the different services of the hospital and support to the mobile clinic</li> <li>- Improve acceptance and perception of MSF</li> </ul>
	Kabul- ASB	<ul style="list-style-type: none"> <li>- Health education on all relevant medical topics in the different services of the Ahmad Shah Baba Hospital (maternal health, nutrition, triage, blood donation, etc.)</li> <li>- Awareness raising on primary health care (including EPI) and preventive messages within the mobile clinics</li> <li>- Support the development of the exit strategy</li> </ul>
	Khost	<ul style="list-style-type: none"> <li>- Health education on maternal and child health care with a special focus on breastfeeding, ANC, PNC and Kangaroo mother care</li> <li>- Community engagement to support the decentralization process</li> <li>- Conduct short qualitative assessment of the context</li> </ul>
	Kandahar (OCA)	<ul style="list-style-type: none"> <li>- Health education and patient support for TB patients</li> </ul>
	Dasht-e-Barchi (DeB) (OCP)	<ul style="list-style-type: none"> <li>- Health education on maternal and child health care with a special focus on breastfeeding, ANC &amp; PNC</li> </ul>
<b>Algeria</b>	Annaba & Tamanrasset	<ul style="list-style-type: none"> <li>- Technical support to design and follow-up community activities, implemented by two local NGOs</li> </ul>
<b>Cambodia</b>	Preah Vihear	<ul style="list-style-type: none"> <li>- Forest ethnography on malaria</li> <li>- Qualitative study on perception and acceptability of PRO-ACD</li> <li>- Support for passive and active malaria detection</li> </ul>
<b>DRC</b>	Masisi	<ul style="list-style-type: none"> <li>- Health education on all relevant medical topics in the hospital, the two health centres and the mobile clinic</li> <li>- Specific focus on family planning and malnutrition</li> <li>- Support to the malaria intervention and mosquito net distribution</li> </ul>
	Bikengue	<ul style="list-style-type: none"> <li>- Support to the closing of the project through exit strategy information</li> </ul>
	Bili	<ul style="list-style-type: none"> <li>- Health promotion in refugee camps with a special focus on nutrition and malaria</li> <li>- Support to mobile clinic and health structures</li> </ul>
	Kinshasa PUC	<ul style="list-style-type: none"> <li>- Support for most of the assessments and interventions related to all relevant health topic all over DRC</li> </ul>
	Kinshasa Coordination	<ul style="list-style-type: none"> <li>- Technical support to all projects in DRC</li> </ul>
<b>Egypt</b>	Migrants in Cairo	<ul style="list-style-type: none"> <li>- Redefining the HP strategy to support the new multi-disciplinary approach developed in the project</li> <li>- Anthropological survey on female genital mutilation</li> </ul>
	Alexandria	<ul style="list-style-type: none"> <li>- Health &amp; hygiene promotion for the detained refugees</li> <li>- On-going socio-cultural assessment of the context</li> </ul>
<b>Haiti</b>	Martissant & Tabarre	<ul style="list-style-type: none"> <li>- Ongoing HP activities</li> <li>- Discussion on reorientation of HP activities for Martissant project</li> </ul>
<b>India</b>	Chhattisgarh	<ul style="list-style-type: none"> <li>- HP activities supporting all the medical activities in the different health facilities and catchment areas: PHC, malaria, nutrition, tuberculosis, maternal health, etc.</li> </ul>
<b>Indonesia</b>	Banten	<ul style="list-style-type: none"> <li>- Assessment on the sexual and reproductive health education program for adolescent</li> </ul>
<b>Lebanon</b>	Beirut	<ul style="list-style-type: none"> <li>- HP support for refugees in Shatila (three refugee camps): Hygiene promotion sessions in PHC, health therapeutic education session for diabetes and epilepsy, mapping &amp; community networking</li> <li>- HP support in the South project: hygiene promotion, security risk analysis, crowd control, awareness session on mental health</li> </ul>
<b>Mauritania</b>	Bassikounou	<ul style="list-style-type: none"> <li>- Promotion of MSF services in camps and among the local population</li> <li>- Health education inside the health facilities on primary health care, ante &amp; postnatal care, nutrition, family planning, water hygiene &amp; sanitation, vaccinations, cholera, malaria</li> <li>- Health surveillance (mortality, pregnancy, nutrition screening, etc.) and health awareness raising in the camps</li> </ul>
<b>Pakistan</b>	Timurgara	<ul style="list-style-type: none"> <li>- HP activities in the hospital to support all relevant medical topics: hygiene, maternal health, diabetes, etc.</li> <li>- Specific focus on use &amp; overuse of oxytocin</li> <li>- Awareness in the community on Dengue prevention</li> <li>- Proposed strategy for more community engagement and health education in the community</li> </ul>
	Karachi	<ul style="list-style-type: none"> <li>- HP activities in the community: promotion of the services and health awareness on hepatitis C and seasonal diseases.</li> <li>- HP activities in the clinic to support all relevant medical topics: PHC, maternal health care, information on MSF</li> <li>- Awareness event international days in collaboration with the Communication department</li> </ul>
	Bajaur	<ul style="list-style-type: none"> <li>- Health education sessions in the health facility</li> </ul>
<b>Sierra Leone</b>	Kenema	<ul style="list-style-type: none"> <li>- Support to the health promotion of the MoH</li> <li>- Support the phasing out of the project</li> </ul>
<b>Central African Republic</b>	Bangui	<ul style="list-style-type: none"> <li>- Promotion of MSF services &amp; MSF identity</li> <li>- Health surveillance in the camps: mortality, nutrition, etc.</li> <li>- Health education on all relevant medical topics (malaria, measles, SRH, nutrition, etc.) in the hospital, the health posts and the camps &amp; the host community</li> </ul>
	Bangassou	<ul style="list-style-type: none"> <li>- Health education activities in the hospital and in the community on malaria, hygiene, SRH and blood donation</li> <li>- Development and implementation of the community based strategy</li> </ul>

<b>South Africa</b>	Rustenburg (SGBV)	<ul style="list-style-type: none"> <li>- Health Promotion strategy developed on SGBV</li> <li>- Production of health promotion tools</li> </ul>
<b>Venezuela</b>	Maracaibo	<ul style="list-style-type: none"> <li>- Promotion of MSF services &amp; MSF identity</li> <li>- Recruitment of the HP team</li> <li>- Various assessment of the socio-cultural context of sexual and reproductive health targeting adolescents</li> </ul>
	Bolivar	<ul style="list-style-type: none"> <li>- Promotion of MSF services &amp; MSF identity</li> <li>- Recruitment of the HP team</li> <li>- Mapping of the existing actors dealing with malaria in the area</li> <li>- Develop a health promotion strategy on line with the WASH activities</li> </ul>
<b>Zimbabwe</b>	Mbare (SGBV)	<ul style="list-style-type: none"> <li>- Special focus on health promotion activities targeting adolescents</li> <li>- Support the decentralization of SV services to other polyclinics in the city</li> </ul>

**ACD:** Active Case Detection; **ANC:** Ante-Natal Care; **ATFC:** Ambulatory Therapeutic Feeding Centre; **EPI:** Extended Programme on Immunisation; **HP:** Health Promotion; **MoH:** Ministry of Health; **NGO:** Non-Governmental Organization; **PHC:** Primary Health Care; **PNC:** Post-Natal Care; **SGBV:** Sexual and Gender-Based Violence; **SRH:** Sexual and Reproductive Health; **SV:** Sexual Violence; **TB:** Tuberculosis; **WASH:** Water, Sanitation and Hygiene

# SECTION 12:

## HIV/TUBERCULOSIS/HEPATITIS C

**TABLE:** MSF-OCB HIV/TB trainings, 2016

Training	Month	Location	Number of participants
<b>HIV-TB Programmatic</b>	March	Cape Town	26
	June	Malawi	20
	February	Democratic Republic of Congo	25
<b>HIV/TB clinical advanced</b>	May	Cape Town	12
	October	Cape Town	11
<b>HIV/TB clinical</b>	April	Guinea	28
	July	Central African Republic	22
	August	Mozambique	16
	September	DRC	23
<b>HIV/TB clinical &amp; programmatic</b>	September	Kenya (OCP)	20
<b>DRTB training</b>	June	Swaziland (OCG-OCA)	30
	November	Cape Town	23
<b>HIV/TB Monitoring &amp; Evaluation</b>	August	Cape Town	20
<b>Training of Trainers</b>	July	Mozambique	8
<b>Training of Trainers - mentoring</b>	January	South Africa	10
	February	Democratic Republic of Congo	9
	March	Malawi	14
	September	Kenya	14
<b>Total</b>	<b>18 trainings</b>	<b>5 off-site (Cape Town) 13 on site (field)</b>	<b>331</b>

**DRTB:** Drug Resistant Tuberculosis; **HIV:** Human Immunodeficiency Virus; **MSF-OCB:** Médecins Sans Frontières, Operational Centre Brussels; **OCA:** Operational Centre Amsterdam; **OCG:** Operational Centre Geneva; **OCP:** Operational Centre Paris; **TB:** Tuberculosis



# SECTION 14:

## LABORATORY

**TABLE 1:** OCB Laboratory Activities, 2016

Country	Project	Number of Laboratories	HIV & TB	Transfusions (only)	Hospital (transfusions included)	Other	Project status
Algeria	Annaba	1	1				Closed in 2016
	Tamanrasset	1	1				Closed in 2016
Democratic Republic of Congo	Bili	1			1		New
	Kinshasa	1	1				Ongoing
	Masisi	1			1		Ongoing
	Nyabiondo	1		1			Ongoing
Burundi	Bujumbura	1			1		Ongoing
Mauritania	Bassikounou	1			1		New
Central African Republic	Bangassou	1			1		Ongoing
	Bangui/maternity	1		1			New
Kenya	Nairobi	1	1				Handover planned for 2017
Guinea	Conakry	1	1				Ongoing
South Sudan	Pibor	1			1		Ongoing
	Gogrial	1		1			Closed in 2016
	Doro	1		1			New
Niger	Guidan Roundji	1			1		Closed in 2016
Haiti	Port-au-Prince	1			1	1 Microbiology (referred)	Ongoing
Ukraine	Dnepropetrovsk	1	1 (+ MDR-TB)				New
Zimbabwe	Birch B.	1	1				Closed
	Gutu	1	1				Ongoing
	Harare */ NMRL	1	1				Ongoing
	Mutare	1	1				Ongoing
Malawi	Nsanje	1	1				Ongoing
Mozambique	Maputo	1	1				Ongoing
	Tete	1	1				Ongoing
Afghanistan	Kabul	1			1		Ongoing
	Khost	1		1			Ongoing
	Kunduz	1			1	1 (microbiology)	Closed
Pakistan	Timurgara	1		1			Ongoing
	Karachi	1				Hepatitis C	New
<b>Total active laboratories</b>		<b>30</b>	<b>12</b>	<b>6</b>	<b>10</b>	<b>2</b>	

HIV: Human Immunodeficiency Virus; MDR-TB: Multidrug Resistant Tuberculosis; TB: Tuberculosis

# SECTION 17:

## MENTAL HEALTH

**TABLE 1:** OCB Mental Health activities in emergency/short term interventions, 2016

Country	Project	Type of activities	Number of new patients	Number of individual consultations <sup>1</sup>	Number of group sessions and number of participants in group sessions
<b>Sierra Leone</b>	Freetown	Psychological support for Ebola survivors and their families	255	453	NA
<b>Guinea</b>	Conakry	Psychological support for Ebola survivors, their families and Ebola staff	978	2,934	NA
	Focarlah	Psychological support for Ebola survivors and their families	ND	ND	ND
<b>Ecuador</b>	7 locations around earthquake epicentre	After the earthquake - capacity building of national MHPS professionals on emergency interventions in 7 locations, technical support at the national level regarding MH policy in emergency + short term mission 2 months after to evaluate the impact of initial intervention	519 professionals trained	NA	750 participants in group support
<b>Haiti</b>	Port à Piment	Psychosocial support to individuals, families and groups affected by the Matthew hurricane	86	126	113 (2,984)
<b>Indonesia</b>	Sigli	Psychosocial support and psycho-educational group sessions for population affected by earthquake	NA	NA	6 (223)

<sup>1</sup> Not including HIV counselling sessions;

MPHS: Mental Health/Psycho-Social; MH: Mental Health; ND: No data available; NA: Not applicable; OCB: Operational Centre Brussels

**TABLE 2:** Mental Health activities integrated into OCB medical projects, 2016

Country	Project	Type of activities	Number of new patients	Total number of individual consultations <sup>1</sup>	Number of group sessions and number of participants in group sessions
<b>New Mental Health activities</b>					
<b>Lebanon</b>	Akkar	Mental health and psycho-social support for Syrian migrants in clinics and in the community	194	574	clinics 48 (1,556) community 221 (2,151)
	Burj El Barjne	Mental health for Syrian refugees (integration to home based care for elderly NCD patients, SRH + individual, family and group psychological sessions for refugees in the camp)	Data will be available in 2017		
<b>Greece</b>	Thessaloniki	Mental health and psycho-social support for migrants in and outside of the camps	247	1,027	79 (476)
<b>Tunisia</b>	Sfax	Mental health and psycho-social support for migrants transiting through Tunisia	Data will be available in 2017		
<b>Serbia</b>	Belgrade	Psycho-social and psychological support for migrants in transit living in informal settings	706	843	328 (1,396)
<b>Ukraine</b>	Dnepropetrovsk	Psychological and psychiatric support of MDR-TB/ HIV patients in prison	ND	ND	ND
<b>Malawi</b>	Blantyre	Psychiatric care in Maula and Chichiri prisons	38	191	NA
<b>Burundi</b>	Bujumbura	Psychological support for patients and their families at the MSF Trauma Centre Arche	1,160	2,737	235 (841)
<b>Mauretania</b>	Mbera	Psychiatric care for refugees from Mali in camps	93	489	NA
<b>Turkey</b>	Hatay province	Psycho-social services for Syrian refugee population in Hatay province	59	139	30 (175) psycho-education group discussions group distraction
<b>Sweden</b>	Gotene	Mental health for asylum seekers in Gotene	39	117	49 (958) PFA/psycho-education/cultural briefing/ occupational therapy

On-going Mental Health activities					
Italy	Sicily/Trapani	Screening and psychological support for asylum seekers in CAS (centre for reception and first aid). Technical support for national psychologists and social workers in CAS - opening of a transcultural clinic for specialized care.	295	625	878 (3,507)
	Rome	Care for victims of torture (mainly migrants) including psychological and psychiatric care.	78	853	44
	Como	MHPS for migrants transiting	126	184	44
	Sicily – Calabria, Puglia, Lampedusa	Psychological First Aid / crisis intervention project for the survivors of shipwrecks / accidents in the main disembarkation ports and Reception Centres of Sicily, Calabria, Puglia and Lampedusa island (31 interventions) individual and group sessions	NA 31 crisis interventions		
Greece	Athens	Care for victims of torture (mainly migrants) - including psychological and psychiatric care	400		NA
	Lesbos	Psychological and psycho-social support for migrants in the camp / opening of a clinic end of the year	421		159 (680)
Pakistan	Timurgara	Psychological support integrated into the MSF medical services (postoperative care, emergency room, OPD and mother and child health)	3,446		350 (4,174)
	Karachi	MH support integrated into an OPD/Hepatitis C project in an urban slum	1,336		148 (2,336)
Kenya	Kibera	SV care, integrated within the PHC	109		NA
	Kibera	MH support integrated within the PHC and HIV/TB consultations	ND		NA
South Sudan	Doro	MH support to refugees (group and individual sessions) in MSF health facilities and in the community, with particular focus on the beneficiaries of nutritional activities	214		(clinic&phcu): 663 (22,589) (community): 117 (3,132)
Democratic Republic of Congo	Masisi	Psychological support to victims of violence, including SV, integration of psychological support in the different medical departments (health posts and mobile clinics)	1,156		54 (1,586)
South Africa	Rustenburg	Mental health support to survivors of sexual gender based violence	298 (+SW 245)		NA
Central African Republic	Bangui-Mpoko	Psycho-social and psychological support for displaced people in refugee camp	2,063 (VSX 74)		707 (7,451)
	Bangui-Castor	Psychological support to Sexual violence victims and women in need of psychological support	1,488 (VSX 328)		NA
	Bangassu	Psychological support integrated into the medical activities of a hospital	423		47 (352)
Zimbabwe	Murambinda, HIV project	Psychological support to victims of sexual, domestic or political violence provided by counsellors to the patients of the HIV cohort	ND		ND
	Mbare	Psychological support of victims of sexual violence	1358		NA
India	Mumbai	Psychological and psychiatric support for MDR-TB/3 <sup>rd</sup> line HIV patients	ND		NA
Haiti	Tabarre	Psychological support and external referrals for specialized care in the MSF trauma centre	1,106		NA
Lebanon	Beirut OPD	Psychological support in Shatila camp in PHC for Syrian refugees/vulnerable Lebanese	405		Clinic 305 (3,856) Community 175 (1,483)
	Beirut women centre	Psychological support in Shatila in MSF women health centre for Syrian refugees/vulnerable Lebanese			
Project closures					
Ukraine	Artemiosk	Psychological support for displaced people (individual and groups) and external training/capacity building for local resources (MH staff-non specialized professionals)/specific intervention in schools	423	616	Groups school 41 (341) MH support groups/psycho-education (2,270)
Democratic Republic of Congo	Bili	Psychological support integrated to medical activities (OPD/IPD/Mobile clinics) for refugees from Central African Republic and local population	1,001	1,415	3,021
Indonesia	Aceh	Psycho-social support for Royingas migrants from Myanmar in refugee camps	104	320	127 (1,479)
Italy	Sicily/Ragusa province	Screening and psychological support/referral for specialized care for asylum seekers in CAS (centre for reception and first aid)	Closure beginning of the year		
	Gorizia	Individual and groups psychological sessions for migrants in informal settings, training of the staff of MoH center for mental health	285	425	

<b>Greece</b>	Idomeni	Psycho-social and psychological support for migrants in transit	476	800	325 (3,217)
	Kos	Psycho-social and psychological support for migrants in transit	39	108	91 (615)
	Leros	Psycho-social and psychological support for migrants in transit	27	49	207 (1,010)
<b>Serbia</b>	Presevo	Psycho-social and psychological support for migrants in transit	67	103	87 (489)
	Sid	Psycho-social and psychological support for migrants in transit	145	176	137 (617)
	Subotica	Psycho-social and psychological support for migrants in transit	465	546	804 (3,729)
<b>Lebanon</b>	South Lebanon	Psychological support for Syrian refugees/Iraqi refugees/vulnerable Lebanese/ (groups, family and individual sessions)	ND	ND	ND

<sup>1</sup> Not including HIV counselling sessions

**CAS:** Centre for reception and first aid; **HIV/TB:** Human Immunodeficiency Virus/Tuberculosis; **IPD:** In-Patient Department; **MH:** Mental Health; **MoH:** Ministry of Health; **MDR-TB:** Multi-Drug Resistant Tuberculosis; **ND:** No data available; **NCD:** Non-Communicable Diseases; **NA:** Not applicable; **OPD:** Out-Patient Department; **PHC:** Primary Health Care; **PFA:** Psychological First Aid; **SRH:** Sexual and Reproductive Health; **SV:** Sexual Violence; **SW:** Social Worker; **TB:** Tuberculosis

# SECTION 19:

## NUTRITION

**TABLE 3:** OCB therapeutic feeding programmes in 2016 by project

Country	Project location	N° of patients	% hospitalised	% cured	% died	% lost to follow-up	Remarks (calculations are at exit)
<b>Vertical Programmes / Emergencies</b>							
<b>DRC</b>	Bunia (Adi, ituri)	390	19%	42%	1%	2%	Started in Nov 2016
	Maniema	323	8%	ND	ND	ND	Measles campaign
	Equateur (Bili)	3,130	24%	51%	2%	13%	Became a regular project end 2016
<b>Nigeria</b>	Borno (Maiduguri)	ND	ND	ND	ND	ND	Official opening delayed; first admissions foreseen in early 2017
<b>Madagascar</b>	Grand Sud (Androy, Anosy)	54	100%	32%	6%	0%	ATFC handed-over end of 2015 ITFC handed-over March 2016
<b>Integrated Programmes</b>							
<b>Afghanistan</b>	Kabul	545	32%	51%	1%	6%	28 transfers; 3 non responders
<b>CAR</b>	Bangassou, Ouango	188	ND	ND	ND	ND	Missing data for ATFC
<b>DRC</b>	Nord Kivu (Masisi, Nyabiondo)	2,136	19%	71%	1%	10%	Nyabiondo opened end 2016
	Maniema (Bikenge)	146	54%	29%	6%	20%	Closed March 2016
<b>Kenya</b>	Nairobi (Kibera)	364	0%	ND	ND	ND	Support to MoH
<b>Lebanon</b>	Syrian refugees	632	0%	ND	ND	ND	
<b>Mauritania</b>	Hodh El Chargui (Bassikounou, Mbera)	321	25%	58%	1%	5%	
<b>Malawi</b>	Prisons	522	63%	ND	ND	ND	
	Kapize	171	23%	ND	ND	ND	Refugees from Mozambique
<b>Mozambique</b>	Manica	51	21%	ND	ND	ND	Missing data for ATFC
<b>Niger</b>	Guidam Roumdji	802	33%	ND	ND	ND	Handed over March 2016
<b>Pakistan</b>	Bajaur	161	ND	ND	ND	ND	
<b>South Sudan</b>	Gogrial	105	100%	36%	0.8%	3%	ITFC data only; closed May 2016
	Pibor, Gumuruk, Lekongole	752	8%	60%	0.4%	28%	Jam is handling ATFC since March 2016
	Maban (Doro)	1,778	19%	72%	0.8%	9%	
<b>Targeted Supplementary Feeding Programmes</b>							
<b>Kenya</b>	Nairobi (Kibera)	701	NA	ND	ND	ND	Support to MoH
<b>Mozambique</b>	Manica	102	NA	ND	ND	ND	
<b>Target and Selective Nutrition Programmes</b>							
<b>Lebanon</b>	Syrian refugees	10,997	NA	NA	NA	NA	
<b>Kenya</b>	Nairobi (Kibera)	3,593	NA	NA	NA	NA	Support to MoH

ATFC: Ambulatory Therapeutic Feeding Centre; CAR: Central African Republic; DRC: Democratic Republic of Congo; ITFC: Intensive Therapeutic Feeding Centre; MoH: Ministry of Health; ND: no data; NA: not applicable



# SECTION 20:

## OPERATIONAL RESEARCH & DOCUMENTATION

List of OCB-Related Scientific Publications, 2016

### A. OPERATIONAL RESEARCH

1. **Viewpoint:** Guillemin N, Dar Berger S, Bissell K, Kumar AM, Ramsay A, Reid AJ, et al. Sustained research capacity after completing a Structured Operational Research and Training (SORT IT) course. *Public Health Action*. 2016;6(3):207-8. Epub 2016/10/04.
2. **Viewpoint – comment on 2, 24, 40-47:** Becerra-Posada F, Espinal MA, Reeder J. Operational research to strengthen tuberculosis control in the Americas. *Revista panamericana de salud publica = Pan American journal of public health*. 2016;39(1):1-2. Epub 2016/10/19.
3. **Viewpoint – comment on 28, 58-60, 84-85, 94, 112-113:** Owiti PO, Kosgei RJ, Kihara A-B, Ogutu O, Kizito W, Edwards JK, et al. Structured Operational Research and Training in the Public Health Sector: The Kenyan experience. *East African Medical Journal*. 2016;93(10):S1-S2.
4. **Original research:** Kumar AM, Shewade HD, Tripathy JP, Guillemin N, Tayler-Smith K, Berger SD, et al. Does research through Structured Operational Research and Training (SORT IT) courses impact policy and practice? *Public Health Action*. 2016;6(1):44-9. Epub 2016/04/07.
5. **Original research:** Zachariah R, Rust S, Berger SD, Guillemin N, Bissell K, Delaunoy P, et al. Building Global Capacity for Conducting Operational Research Using the SORT IT Model: Where and Who? *PLoS One*. 2016;11(8):e0160837. Epub 2016/08/10.

### B. HEALTH SYSTEMS & PROGRAMME MONITORING

6. **Original research:** Romero BC, Joya MC, Aviles MA, Navarro RM, Decroo T, Zachariah R. Tuberculosis among indigenous municipalities in Mexico: analysis of case notification and treatment outcomes between 2009 and 2013. *Revista panamericana de salud publica = Pan American journal of public health*. 2016;39(1):32-7. Epub 2016/10/19. **(SORT-IT course participant)**

### C. HIV

7. **Review:** Bemelmans M, Baert S, Negussie E, Bygrave H, Biot M, Jamet C, et al. Sustaining the future of HIV counselling to reach 90-90-90: a regional country analysis. *J Int AIDS Soc*. 2016;19(1):20751. Epub 2016/05/18.
8. **Review:** Nachega JB, Adetokunboh O, Uthman OA, Knowlton AW, Altice FL, Schechter M, et al. Community-Based Interventions to Improve and Sustain Antiretroviral Therapy Adherence, Retention in HIV Care and Clinical Outcomes in Low- and Middle-Income Countries for Achieving the UNAIDS 90-90-90 Targets. *Curr HIV/AIDS Rep*. 2016;13(5):241-55. Epub 2016/08/01.
9. **Review:** Harries AD, Takarinda K, Zachariah R. *AIDS Review. Africa Health*. 2016;38(2):30-2.

10. **Review:** Harries AD, Suthar AB, Takarinda KC, Tweya H, Kyaw NT, Tayler-Smith K, et al. Ending the HIV/AIDS epidemic in low- and middle-income countries by 2030: is it possible? *F1000Research*. 2016;5:2328. Epub 2016/10/06.

11. **State of the art:** Stinson K, Goemaere E, Coetzee D, van Cutsem G, Hilderbrand K, Osler M, et al. Cohort Profile: The Khayelitsha antiretroviral programme, Cape Town, South Africa. *Int J Epidemiol*. 2016. Epub 2016/05/22.

12. **Viewpoint:** Furin J, Isaakidis P. Life in the time of antiretrovirals in South Africa. *The lancet HIV*. 2016. Epub 2016/12/14.

13. **Original research:** Martinez Perez G, Cox V, Ellman T, Moore A, Patten G, Shroufi A, et al. 'I Know that I Do Have HIV but Nobody Saw Me': Oral HIV Self-Testing in an Informal Settlement in South Africa. *PLoS One*. 2016;11(4):e0152653. Epub 2016/04/05.

14. **Original research:** Henwood R, Patten G, Barnett W, Hwang B, Metcalf C, Hacking D, et al. Acceptability and use of a virtual support group for HIV-positive youth in Khayelitsha, Cape Town using the MXit social networking platform. *AIDS care*. 2016;28(7):898-903. Epub 2016/04/22.

15. **Original research:** Wilkinson L, Harley B, Sharp J, Solomon S, Jacobs S, Cragg C, et al. Expansion of the Adherence Club model for stable antiretroviral therapy patients in the Cape Metro, South Africa 2011-2015. *Trop Med Int Health*. 2016;21(6):743-9. Epub 2016/04/22.

16. **Original research:** Martinez Perez G, Steele SJ, Govender I, Arellano G, Mkwamba A, Hadebe M, et al. Supervised oral HIV self-testing is accurate in rural KwaZulu-Natal, South Africa. *Trop Med Int Health*. 2016;21(6):759-67. Epub 2016/04/22.

17. **Original research:** Huerga H, Van Cutsem G, Ben Farhat J, Reid M, Bouhenia M, Maman D, et al. Who Needs to Be Targeted for HIV Testing and Treatment in KwaZulu-Natal? Results From a Population-Based Survey. *J Acquir Immune Defic Syndr*. 2016;73(4):411-8. Epub 2016/10/30.

18. **Original research:** Vogt F, Rehman AM, Kranzer K, Nyathi M, Van Griensven J, Dixon M, et al. Relationship between time to initiation of antiretroviral therapy and treatment outcomes: a cohort analysis of ART eligible adolescents in Zimbabwe. *J Acquir Immune Defic Syndr*. 2016. Epub 2016/12/22.

19. **Original research:** Matyanga CM, Takarinda KC, Owiti P, Mutasa-Apollo T, Mugurungi O, Buruwe L, et al. Outcomes of antiretroviral therapy among younger versus older adolescents and adults in an urban clinic, Zimbabwe. *Public Health Action*. 2016;6(2):97-104. Epub 2016/07/01. **(SORT-IT course participant)**

20. **Original research:** Vogt F, Kalenga L, Lukela J, Salumu F, Diallo I, Nico E, et al. Decentralizing ART supply for stable HIV patients to community-based distribution centres: Programme outcomes from an urban context in Kinshasa, DRC. *J Acquir Immune Defic Syndr*. 2016. Epub 2016/10/28. **(SORT-IT course participant)**

### D. HIV/TUBERCULOSIS CO-INFECTION

21. **Review:** Telisingshe L, Charalambous S, Topp SM, Herce ME, Hoffmann CJ, Barron P, et al. HIV and tuberculosis in prisons in sub-Saharan Africa. *Lancet*. 2016;388(10050):1215-27. Epub 2016/07/19.

22. **Review:** Harries AD, Kumar AMV, Thu Thu Kyaw N, Binh Hoa N, Takarinda KC, Zachariah R. The role of antiretroviral therapy in reducing TB incidence and mortality in high HIV-TB burden countries. *Asian Pacific Journal of Tropical Disease*. 2016;6(3):243-7.

23. **Viewpoint:** O'Donnell MR, Daftary A, Frick M, Hirsch-Moverman Y, Amico KR, Senthilingam M, et al. Re-inventing adherence: toward a patient-centered model of care for drug-resistant tuberculosis and HIV. *Int J Tuberc Lung Dis*. 2016;20(4):430-4. Epub 2016/03/13.

24. **Original research:** Kanyerere H, Girma B, Mpunga J, Tayler Smith K, Harries AD, Jahn A, et al. Scale-up of ART in Malawi has reduced case notification rates in HIV-positive and HIV-negative tuberculosis. *Public Health Action*. 2016;6(4):247-51.

25. **Original research:** Torrens A, Bartholomay P, Silva S, Khogali M, Verdonck K, Bissell K. HIV testing, antiretroviral therapy, and treatment outcomes in new cases of tuberculosis in Brazil, 2011. *Revista panamericana de salud publica = Pan American journal of public health*. 2016;39(1):26-31. Epub 2016/10/19. **(SORT-IT course participant)**

26. **Original research:** Mchunu G, van Griensven J, Hinderaker SG, Kizito W, Sikhondze W, Manzi M, et al. High mortality in tuberculosis patients despite HIV interventions in Swaziland. *Public Health Action*. 2016;6(2):105-10. Epub 2016/07/01. **(SORT-IT course participant)**

27. **Original research:** Thi AM, Shewade HD, Kyaw NT, Oo MM, Aung TK, Aung ST, et al. Timing of antiretroviral therapy and TB treatment outcomes in patients with TB-HIV in Myanmar. *Public Health Action*. 2016;6(2):111-7. Epub 2016/07/01. **(SORT-IT course participant)**

28. **Original research:** Sah SK, Sahu SK, Lamichhane B, Bhatta GK, Bhandari KB, Owiti P, et al. Ditching the Three I's for collaborative TB-HIV activities: evaluation of a pilot programme in Kathmandu, Nepal. *Public Health Action*. 2016;6(3):169-75. Epub 2016/10/04. **(SORT-IT course participant)**

29. **Original research:** Omesa EN, Kathure IA, Masini E, Mulwa R, Maritim A, Owiti PO, et al. Uptake of isoniazid preventive therapy and its associated factors among HIV positive patients in an urban health centre, Kenya. *East African Medical Journal*. 2016;93(10):S47-S54. **(SORT-IT course participant)**

## E. TUBERCULOSIS (INCLUDING DRUG-RESISTANT TUBERCULOSIS)

30. **State of the art:** van Cutsem G, Isaakidis P, Farley J, Nardell E, Volchenkov G, Cox H. Infection Control for Drug-Resistant Tuberculosis: Early Diagnosis and Treatment Is the Key. *Clin Infect Dis*. 2016;62 Suppl 3:S238-43. Epub 2016/04/28.
31. **Viewpoint:** Furin J, Isaakidis P. The tuberculosis emergency in eastern Europe. *The lancet HIV*. 2016;3(3):e107-8. Epub 2016/03/05.
32. **Viewpoint:** Das M, Isaakidis P, Van den Bergh R, Kumar AMV, Sharath BN, Mansoor H, et al. Treating all multidrug-resistant tuberculosis patients, not just bacteriologically confirmed cases. *Public Health Action*. 2016;6(2):157.
33. **Viewpoint:** Suthar AB, Zachariah R, Harries AD. Ending tuberculosis by 2030: can we do it? *Int J Tuberc Lung Dis*. 2016;20(9):1148-54. Epub 2016/08/12.
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**126. Original research:** Trovato A, Reid A, Takarinda KC, Montaldo C, Decroo T, Owiti P, et al. Dangerous crossing: demographic and clinical features of rescued sea migrants seen in 2014 at an outpatient clinic at Augusta Harbor, Italy. *Confl Health*. 2016;10:14. Epub 2016/06/17. **(SORT-IT course participant)**

# SECTION 23:

## SURGICAL ACTIVITIES

**TABLE 1:** Overview of OCB surgical activities per project, 2016

Mission		AFG	AFG	BDI	CAR	CAR
Project		Kabul	Khost	Bujumbura	Bangassou	Castors
Patients (1)	number	1,375	1,004	892	934	1,267
Cases (2)	number	1,389	1,025	3,195	1,929	1,36
Procedures (3)	number	1,413	1,237	3,669	1,945	1,392
Mean Age (4)	years	26	32	27	29	25
Female (4)	%	70.5	100.0	24.2	51.6	100.0
All trauma (4)	%	1.8	0.0	99.4	19.1	0.0
Violent trauma (4)	%	0.9	0.0	36.9	3.4	0.0
Caesarean section (4)	%	41.7	70.2	0.0	17.4	72.5
Primary interventions (5)	%	99.0	98.0	27.9	48.4	93.2
Emergent cases (5)	%	95.1	95.0	100.0	87.5	99.9
Minor / wound surgery (5)	%	3.5	0.1	71.0	66.3	6.6
Spinal anaesthesia (5)	%	82.9	74.7	13.0	21.8	58.7
Spinal procedure / C-section (6)	%	96.2	91.5	NA	91.4	79.1
Intra-operative mortality (5)	%	0.1	0.1	0.1	0.2	0.3
Occupancy rate	minutes/day	304	184	460	245	234

(1) reflects the number of new cases

(2) reflects the number of entrances to Operating Department as the number of anaesthesia

(3) reflects the number of performed surgical procedures

(4) denominator is the number of patients

(5) denominator is the number of cases

(6) both spinal and combined techniques

ND: no data; NA: not applicable; AFG: Afghanistan; BDI: Burundi; CAR: Central African Republic; DRC: Democratic Republic of Congo; HTI: Haiti; MRT: Mauritania; NPL: Nepal; PAK: Pakistan; SSD: South Sudan



DRC	DRC	DRC	DRC	HTI	MRT	PAK	SSD	SSD	TOTAL
Bikenge	Bili	Masisi	Mukedi	Tabarre	Bassikounou	Timurgara	Bor	Pibor	
115	564	1,964	41	3,413	347	1,345	145	40	13,446
128	740	3,121	66	8,081	363	1,359	160	42	22,958
140	793	3,28	66	10,563	366	1,506	167	42	26,579
26	29	25	20	29	26	33	38	19	-
66.9	50.4	75.6	51.2	27.2	56.8	100.0	35.2	30.0	-
10.4	16.3	15.7	0.0	88.2	28.0	0.2	22.1	37.5	-
0.0	5.2	6.0	0.0	21.4	1.4	0.0	13.1	25.0	-
38.3	14.9	47.6	14.6	0.0	31.7	88.2	11.7	2.5	-
89.8	76.2	62.9	62.1	42.2	95.6	99.0	90.6	95.2	-
85.9	81.4	94.2	100.0	100.0	94.5	100.0	61.9	100.0	-
35.2	43.7	55.2	13.6	51.1	33.1	0.3	27.5	95.2	-
47.6	31.8	33.5	0.0	21.8	42.4	79.3	38.8	0.0	-
93.2	76.2	94.4	NA	NA	91.8	86.3	58.8	0.0	-
0.0	0.1	0.1	0.0	0.3	0.0	0.5	0.0	0.0	-
69	136	452	86	1970	59	211	76	ND	-



#### OCB Medical Activity Report 2016

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