



MSF - OPERATIONAL CENTRE BRUSSELS - MEDICAL DEPARTMENT

OCB MEDICAL ACTIVITY REPORT 2014

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OCB Medical Activity Report 2014

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INTRODUCTION

As an international humanitarian aid organisation that provides medical assistance to populations around the world, the Medical Department of MSF-OCB is responsible for providing the medical core for operations, and for guiding and supporting its medical activities in the field.

This is the seventh edition of the OCB Medical Activity Report, which provides an overview of the 22 technical domains of the Medical Department. The report serves to 1) highlight the role of the Medical Department in the OCB operations, 2) compile a memory document of the activities and lessons learned over time, 3) enhance reflection and critical review of the department and its activities, and 4) demonstrate the scope and relevance of our medical activities to partners and donors around the world.

My gratitude extends to all the members of the Medical Department for their hard work over the past year, and for their support and collaboration in compiling this report. Any formal feedback in improving this report is most welcome and should be sent to rony.zachariah@brussels.msf.org.

Finally, I wish to thank all OCB staff on the field, at headquarters and particularly to all our OCB partner sections and other partners, for their continued support of MSF activities around the world.

With compliments



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EXECUTIVE SUMMARY

In 2014, Médecins Sans Frontières – Operational Centre Brussels (OCB) was involved in 30 missions with a medical component, comprising 78 projects. Overall, there were 1,989,505 consultations in the outpatient department (OPD), of which 637,747 were children under five years old, and 137,899 admissions to the inpatient department (IPD).

Major emergency interventions included the Ebola outbreak intervention in West Africa, assistance to internally displaced persons, refugees and war wounded (in Syria, Central African Republic, Mauritania, South Sudan, and Ukraine) and assistance following the cyclone in the Philippines. Geographically, sub-Saharan Africa continued to be the main focus of intervention, but important activities were also performed in North Africa, Asia and the Middle East (figure).

Overall, there were:

7,328 admissions to Ebola Treatment Centres (4,589 confirmed cases)

33,061 new HIV patients initiated on antiretroviral therapy (ART)

278,009 confirmed malaria cases

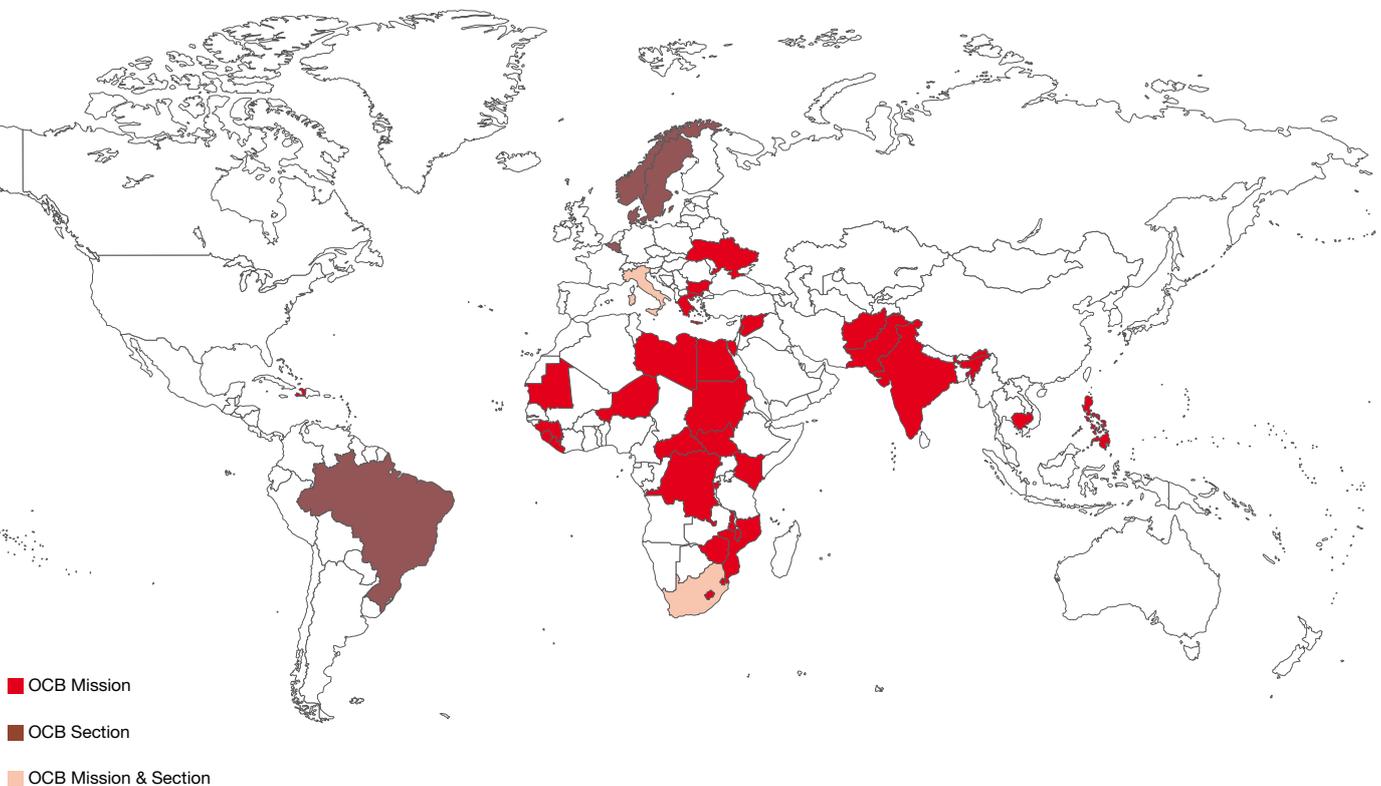
24,890 with severe acute malnutrition

61,172 deliveries

12,005 new surgical cases

223,062 emergency department (ED) consultations

Figure: Global OCB sections and missions, 2014



1. YEAR IN REVIEW

The year 2014 was unavoidably dominated by the West Africa Ebola Virus Disease (EVD) outbreak, diverting time and resources to the outbreak response, and leading to closures/reductions of projects in the affected countries. It also created a considerable innovation space, in which the emergency response was continuously adapted to the ever-changing outbreak, training models were scaled up and expanded beyond the borders of MSF, and MSF projects were opened to host clinical trials on novel therapeutics and vaccines.

In the stable projects, 2014 saw an increase in OCB medical activities across a number of domains including HIV, TB, intensive care, health promotion (HP) and mental health (MH), whilst other domains such as laboratory, nutrition, sexual and reproductive health (SRH), malaria, paediatrics, surgery, and emergency medicine noted reductions in their activities. The main reasons for reduction were generally project closures or handovers, and diversion of resources to the Ebola outbreak.

Considerable progress was made in relation to certain operational priorities: rationalisation and focusing of hospital care, improved quality of life-saving medical services, increased capacity to respond to acute emergencies - including emergencies related to acute conflict and epidemics - and successful pursuit of a series of particular public health objectives in the field of HIV and TB.

Innovations outside of the Ebola intervention included the deployment of MH activities in a number of new fields, including care for victims of torture; implementation of a malaria elimination project in Cambodia; introduction of microbiology technology for the detection of antibiotic resistance, and introduction of community based *Cryptococcus* confirmation testing among HIV patients by lay counsellors.

Efforts continued towards standardising the quality of care and ensuring a minimum standard across the spectrum of OCB projects: more missions had the minimum requirements in place to be able to independently manage their biomedical equipment; there was a greater focus on ensuring that the essential Water Hygiene and Sanitation requirements (WHS) were respected in established missions; more projects with an emergency department were successfully

using the South African Triage Scale (SATS); a proxy quality indicator of anaesthesia care (proportion of spinal procedures for Caesarean sections) is successfully used and assessed in projects; and a full set of key performance indicators of medical stocks allowed to overview of medical stocks in all OCB projects.

At the level of data monitoring and evaluation, the in-house data collection system MINOS (Medical Information Network for Operational support) was rolled out further, and by the end of the year accounted for 51% of all OPD data and 34% of all IPD data. Overall, there seemed to be a stronger level of commitment towards quality of data collection and a more proactive mind-set towards utilising routine data to identify knowledge and implementation gaps in OCB programs. This increased culture of reflecting on and questioning the status quo also helped to drive the expansion of the OCB operational research (OR) portfolio to include new areas such as EVD, trauma care, natural disasters, migrant health, antibiotic resistance and neonatology. OCB, in collaboration with Epicentre and partners, continued to contribute to an extensive profile of clinical and operational research in EVD, vaccine preventable diseases, nutrition, HIV and malaria.

Finally, continued efforts were made to consolidate and improve links between Operations and the field, through field visits, Mobile Implementation Officer (MIO) support, briefings and trainings; between different technical domains, as reflected by improved integration of interventions - e.g. HP and MH integration in medical activities; and between different MSF sections, especially during the Ebola outbreak. Many domains now have intersectional working groups and there are a large number of intersectional trainings.

2. CHALLENGES AND PROSPECTS

In 2014, the main challenge was the response to the magnitude of the Ebola outbreak in West Africa. A challenge for some of the medical department units was to support the Ebola activities whilst maintaining similar support to other missions. Other challenges were related to OCB's evolution towards more complex projects, with higher technical needs, higher standards, and more activities included, and the complexity of the different contexts where OCB works, related to logistics, security, politics and human resources. Despite marked improvements at the level of

data monitoring and data collection, data capture, data quality, and standardization of indicators continued to be highlighted as areas that need to be improved.

The prospects for 2015 are to sustain OCB investing in specialized IPD capacity, aiming for a greater shift towards more ambulatory and community-based care, essentially developing a new equilibrium between primary health care (PHC) and referral care. Closely linked to this, there will be a stronger emphasis on comprehensive approaches that address the health-related needs of communities in a more holistic manner - this, particularly in the case of emergencies and in other areas such as sexual violence (active case finding) and Hepatitis C virus care (community based chronic care).

Priority areas for investment and specific capacity building will continue in the fields of Ebola management, surgery (particularly in emergencies), HIV (with OCB remaining an engine for political, technical and public health change, and remaining a watchdog for system failures), TB (with a particular focus on drug resistant TB) and hospital care. Furthermore, there will be a stronger emphasis on emergency responses and OCB interventions in conflict areas. Beyond these priority areas, other areas that will receive new or ongoing attention are neonatology, health promotion, vaccination, care for victims of torture, interventions for migrants and those with hepatitis C. Alongside the technical and operational capacity that will be invested into these areas, operational research will play a substantial role in guiding the way that OCB tackles some of these areas.

Finally, OCB's presence in more challenging and complex settings (e.g. conflict settings, settings with challenging supply processes), the shift towards community-based approaches, the expectations on MSF as a leading humanitarian organisation, together with the fact that OCB projects globally are encompassing a much more diverse package of integrated activities, will necessitate the development and implementation of more innovative models of care delivery, which in turn will need operational research.

LIST OF ABBREVIATIONS

ACF: Action Contre la Faim	HPV: Human Papilloma irus	OD: Operating Department
ACT: Artemisinin-based Combination Therapy	HQ: Headquarters	OPD: Outpatient Department
AIDS: Acquired Immune Deficiency Syndrome	HR: Human Resources	OPV: Oral polio vaccine
ACLS: Advanced Cardiac Life Support course	HTC: HIV Testing and Counselling	OR: Operational Research
ALSO: Advanced Life Support in Obstetrics	ICU: Intensive Care Unit	ORP: Oral Rehydration Post
ANC: Antenatal Care	IDP: Internally Displaced Persons	ORS: Oral Rehydration Solution
ARO: Annual Review of Operations	IEG: International Evaluation Group	OT: Operating Theatre
ART: Antiretroviral Therapy	3IE: International Initiative for Impact Evaluation	OTFP: Outpatient Therapeutic Feeding Program
ASB: Ahmad Shah Baba hospital	ILS: Immediate Life Support	PCR: Polymerase Chain Reaction
ATFC: Ambulatory Therapeutic Feeding Centre	IM: Intramuscular	PCV: Pneumococcal Vaccine
ATLS: Advanced Trauma Life Support	IPC: Infection Prevention and Control	PEPFAR: President's Emergency Plan For AIDS Relief
AWD: Acute Watery Diarrhoea	IPD: Inpatient Department	PEWS: Paediatric Early Warning Scores
BASIC DHS: Basic Assessment and Support of Seriously Ill Patients in Developing Healthcare Systems	IPT: Isoniazid Preventive Therapy	PFA: Psychological First Aid
BCG: Bacille Calmette-Guérin (TB vaccination)	IPTC: Intermittent Preventive Treatment for children	PHA: Public Health Action
BEmONC: Basic Emergency Obstetric and Neonatal Care	IS: Islamic state	PHC: Primary Health Care
BLoC: Basic Logistics Course	ITC: International Technical Coordination	PHU: Primary Health care Unit
BSFP: Blanket Supplementary Feeding Program	ITFC: Inpatient Therapeutic Feeding Centre	PICC: Peripherally Inserted Central Catheter
BraMU: Brazilian Medical Unit	IV: Intravenous	PITC: Provider initiated counselling and testing
CAR: Central African Republic	KAP: Knowledge, Attitude and Practice	PLW: Pregnant and Lactating Women
CDC: Centres for Disease Control	KPI: Key Performance Indicators	PLWHA: People Living With HIV/AIDS
CEmONC: Comprehensive Emergency Obstetric and Neonatal Care	LCC: Logistics Coordinator Course	PMC: Project Management Course
CFR: Case Fatality Rate	LN: Long-lasting insecticide-treated Nets	PMTCT: Prevention of Mother-To-Child Transmission
CMAM: Community Management of severe Acute Malnutrition	LFA: lateral Flow Assay	PNC: Postnatal Care
CTC: Cholera Treatment Centre	LMIC: Low & Middle Income Country	POC: Point Of Care
CMV: cytomegalovirus	LRTI: Lower Respiratory Tract Infection	PPD: Preparation for Primary Departure
DBS: Dried Blood Spot	LSHTM: London School for Hygiene and Tropical Medicine	PPE: Personal Protective Equipment
DPC: Directorate of Disease Prevention and Control	LTFU: Loss To Follow-Up	PSP: Populations in Precarious Situations (course)
DPT: Diphtheria-Pertussis-Tetanus vaccine	LUXOR: Luxembourg Operational Research	PUC: Pool d'Urgence Congo
DR-TB: Drug Resistant Tuberculosis	MAM: Moderate Acute Malnutrition	RCT: Randomized Control Trial
DRC: Democratic Republic of Congo	MCV: meningococcal conjugate vaccine	RDT: Rapid Diagnostic Test
DS-TB: Drug sensitive Tuberculosis	MDR: Multi-Drug Resistant	REPEPI: Responding to Epidemics (course)
DST: Drug Susceptibility Testing	M&E: Monitoring & Evaluation	RIC: Remaining In Care
EAC: Enhanced Adherence Counselling	MEURI: Monitored Emergency Use of Unregistered and Experimental Drugs	RIF: Resistance to Rifampicin
EVD: Ebola Virus Disease	MFH: Modular Field Hospital	RUSF: Ready to Use Supplementary Food
ED: Emergency Department	MH: Mental Health	SAGE: Surgery/Orthopaedics, Anaesthesia/ Reanimation, Gynaecology/Obstetrics, and Emergency/Intensive Care
EML: Essential Medicine List	MHS: Management of Health Services	SAM: Severe Acute Malnutrition
EPI: Expanded Programmes of Immunisation	MINOS: Medical Information Network for Operational Support	SAMU: Southern African Medical Unit
Eprep: Emergency Preparedness	MIO: Mobile Implementation Officer	SATS: South African Triage Score
EPTB: Extra pulmonary Tuberculosis	MMC: Medical management Course	SEU: Stockholm Evaluation Unit
ERB: Ethics Review Board	MO: Missed Opportunity	SFC: Supplementary Feeding Centre
ESC: European Supply Centre	MPAC: Malaria Policy Advisory Committee	SMC: Seasonal Malaria Chemoprevention
ETC: Ebola Treatment Centre	MPH: Master of Public Health	SOP: Standard Operating Procedure
EBC: Espace Bruno Corbé	MoH: Ministry of Health	SORT-IT: Structured OR Training- Initiative
E-Unit: Emergency Unit	MoU: Memorandum of Understanding	SRH: Sexual and Reproductive Health
EU: European Union	MSF: Médecins Sans Frontières	STI: Sexually Transmitted Infections
Explo: Exploratory Mission	MUAC: Mid-Upper Arm Circumference	SEU: Stockholm Evaluation Unit
FDA: Food and Drug Administration	MWH: Maternity Waiting Home	SV: Sexual Violence
FEAST: Fluid Expansion as Supportive Therapy	NA: Not Applicable	TB: Tuberculosis
FP: Family Planning	NCD: Non communicable diseases	TBA: Traditional Birth Attendant
GAM: Global Acute Malnutrition	ND: No Data	TPR: Termination of Pregnancy on Request
GAS: Gynaecology, Anaesthesia, Surgery	NDRA: National Drug Regulatory Authorities	TSFP: Targeted Supplementary Feeding Programs
GDP: Good Distribution Practices	NFI: Non Food Items	UN: United Nations
GP: General Practitioner	NGO: Non-Governmental Organisation	UNICEF: United Nations Children's Fund
GRC: Gondama Referral Centre	NICD/NHLS: National Institute of Communicable Diseases/National Health Institute	VHF: Viral Haemorrhagic Fever
HAI: Healthcare Associated Infection	NTP: National Tuberculosis Programme	WatSan: Water and Sanitation
HIB: Haemophilus influenza B	OCA: Operational Centre Amsterdam	WFP: World Food Program
HIV: Human Immunodeficiency Virus	OCBA: Operational Centre Barcelona	WHO: World Health Organisation
HMTT: Hospital Management Team Training	OCB: Operational Centre Brussels	WHS: Water, Hygiene and Sanitation
HP: Health Promotion	OCG: Operational Centre Geneva	
	OCP: Operational Centre Paris	

A YEAR IN SNAPSHOTS

BIOMEDICAL EQUIPMENT

- The use of advanced medical equipment (specialised laboratory instruments and radiology equipment in particular) in OCB projects continued to increase, leading to a greater need for technical support. This remained a challenge particularly during the period when the Mobile Implementation Officer and Biomedical referent positions were empty.
- Training of national staff to better oversee the management of biomedical equipment, together with the standardization of equipment used in different projects, were key focus areas in 2014.
- By the end of 2014, most missions had the minimum requirements in place needed to independently manage their biomedical equipment (i.e. Democratic Republic of Congo (DRC), Haiti, Afghanistan, Pakistan, South Sudan, India and Sierra Leone).
- An intersectional set of protocols, including user maintenance (medical), preventive maintenance and troubleshooting guides (logistical) were introduced for the most common equipment in the field through biomed trainings and field visits.

EBOLA OUTBREAK

- The West Africa Ebola Virus Disease (EVD) outbreak was declared in March 2014 - the outbreak intervention constituted the largest emergency response in 2014, and impacted the whole movement as time and resources were diverted to the outbreak response, and projects in the affected countries were reduced or closed.
- In 2014, a total of 7,328 patients were admitted to OCB Ebola Treatment Centres (ETC). Out of these, 4,589 were confirmed as EVD cases; 2,546 died and 2,077 recovered.
- Overwhelming caseloads and a slow international response led to an incomplete outbreak response: out of the six pillars of EVD outbreak control, surveillance and contact tracing lagged behind and were only taken up late in some settings.
- A focus was placed on training of MSF staff and other partners: through hot training in the ETCs, other partners were trained in ETC set-up and EVD case management. At HQ level, trainings were provided to internal and external actors: 21 sessions of the First Responders training (theory and practice) reached 717 individuals leaving for the field.
- For the first time, MSF collaborated in clinical trials on vaccination and treatment during an emergency intervention.
- The damage caused by the outbreak cannot be captured by the numbers of EVD cases and deaths alone, as health systems were completely disrupted: health care workers were in-

fectured, facilities were closed, and access for non-Ebola health care was severely compromised.

EMERGENCY MEDICINE

- For many patients, emergency medical care continued to serve as an important point of entry into OCB programmes. Emergency Department (ED) care was provided in 12 projects across seven countries. In most projects, the EDs were embedded in a hospital structure, while two acted as freestanding EDs.
- A total of 223,062 ED consultations were performed during 2014; more than half of these consultations were from Martissant, Haiti (59,024 consultations) and Kabul, Afghanistan (56,580 consultations).
- The triage setup was strengthened in the EDs of OCB, and the South African Triage Scale (SATS) system, introduced in 2011, was used successfully in seven projects. A study conducted on its adequacy is being analysed in-depth.
- The care provided in newly opening EDs needs to be standardised from the beginning, to avoid subsequent modifications and unnecessary workloads.

EMERGENCY UNIT

- In 2014, the E-Unit directly managed interventions in ten countries and supported the operational cells in the management of three emergencies.
- Two major new interventions were the intervention for the Ebola outbreak in West Africa and an intervention for the conflict affecting Ukraine.
- Other than the Ebola response, the largest interventions in terms of medical needs and HR/logistics/financial requirements were the provision of assistance to the displaced, refugees and general population in the Syrian conflict, intervention in the conflict-affected Central African Republic (CAR), intervention in the post-cyclone setting in the Philippines and the intervention for the displaced in South Sudan.
- More than 1,060 departures for emergency mission were noted over the course of 2014; most departures (786 international staff) were dedicated to the Ebola intervention.

EPIDEMIOLOGY/EPICENTRE

- The support provided by Epicentre epidemiologists to MSF-OCB field interventions focused mainly on the humanitarian crisis in the Central African Republic (CAR) and on the Ebola virus disease (EVD) epidemic in West Africa.
- Clinical and operational research was conducted on vaccine preventable diseases (pneumococcal infections, cholera and measles), nutrition, HIV, tuberculosis, and malaria.

- Although 2014 was dominated by the Ebola epidemic, Epicentre was able to devote valuable efforts to the EVD outbreak related activities without jeopardizing other ongoing projects. However, while these activities stimulated the scientific interest of all Epicentre staff, they also significantly challenged Epicentre functioning and raised internal debates. Lessons learned will feed fruitful reflection and recommendations for the future.

EVALUATION UNIT

- The Stockholm Evaluation Unit (SEU) worked on ten evaluations within OCB.
- The 4th Intersectional Evaluation Day was held in Brussels to showcase evaluation work across the movement.
- The SEU took the lead on the creation of www.evaluation.msf.org, which will internally centralize evaluation in MSF and will represent the first public evaluation portal.
- High profile evaluations (such as Ebola) have taken a very long time to launch due to the ongoing operational needs and priorities. Timing is an important factor and these experiences underline the need for early planning and preparation.

HEALTH INFORMATICS

- The Epicentre outpatient department/inpatient department/ gynaecology/ obstetrics data collection tool and MINOS (Medical Information Network for Operational support) were the two main routine data collection tools being used in OCB projects.
- The Epicentre data collection tool was used in 5 out of 29 missions where OCB was working (mainly during emergencies); MINOS was being used in eight missions by the end of 2014, showing that it is progressively replacing the Epitools.
- To answer the need for more detailed reporting of MSF activities, which cannot be met effectively using aggregate data, a collection of dedicated databases (HIV/TB, mental health, surgery, sexual violence, etc.) have been constructed and adapted for customization and/or integration with other activities (e.g. integrated mental health/sexual violence/victims of torture and an integrated hospital database).

HEALTH PROMOTION AND SOCIO-ANTHROPOLOGY

- Health promotion (HP) activities were provided in 43 projects across 22 missions (15 emergency interventions and 28 regular projects).
- Most support was dedicated to HP activities related to the Ebola outbreak in West Africa. This emergency generated a significant increase in the provision of HP support, together with a greater overall interest in anthropological support.

- Lessons learned from the multidisciplinary approach to the Ebola outbreak still need to be discussed, although the central role played by health promotion as one of the main pillars of the intervention is more than clear.
- The strong interest in anthropology is reflected in the opening of a new position Mobile Implementation Officer (MIO) position for qualitative studies. This position will provide transversal support for the medical department.

HIV/AIDS AND TUBERCULOSIS

- In all countries with MSF-supported HIV activities, 2014 saw the phased implementation of the 2013 WHO HIV/AIDS guidelines. This included implementation of viral load monitoring, increasing the antiretroviral therapy (ART) initiation threshold to CD4 < 500 cells/ µl, and initiation of ART in all children under five and all pregnant and breastfeeding women, regardless of level of immune suppression. Retaining pregnant and breastfeeding women in care continued to be one of the most significant challenges, along with the realities of scaling up viral load monitoring.
- OCB continued to invest in its large vertical programmes, but placed a particular focus on the scale up of viral load monitoring, PMTCT (prevention of mother to child transmission) counselling strategies and demonstration of alternative refill models as a means of improving retention in care and supporting further ART scale up.
- The sustainability of ongoing scale up has again been challenged by significant reductions in PEPFAR (President's Emergency Plan for AIDS Relief) funding and realignments within the Global Fund towards the requirement to show greater capacity for domestic funding.
- At the end of 2014, OCB was supporting HIV care and treatment in 18 projects across 10 countries, of which 13 were following a "light approach".
- HIV testing was supported by OCB in 13 projects, with almost 95,000 tests performed (63% in the community).
- A total of 24,660 HIV patients and 4324 TB patients (data reported from only 12 out of 20 projects) were newly registered in OCB-supported facilities.
- A total of 33,061 adults and children were initiated on ART, of which 2453 were children.
- Among adults on ART, retention in care ranged from 71% to 96% (target threshold: 85%) and among children it was 71%- 98%. Although retention in care for children seems slightly better, their viral load levels are significantly worse than those of adults with 30% still showing viral load levels > 1000 copies / ml.
- In the eight projects reporting on TB treatment outcomes, 2330 drug sensitive TB patients were registered and the overall treatment success rate was 36% (none achieved the target rate of >85% for smear positive pulmonary TB). Death rates among TB patients exceeding the 10% target were observed in Lesotho (23%) and Mauritania (11%). Treatment interruption rates > 10% were observed in three projects in Kenya (11%), India (21%) and Mauritania (26%).

- A total of 450 patients were initiated on treatment for multidrug-resistant TB (MDR-TB) across six OCB projects. The decrease compared to 2013 (n=536 patients) is mainly due to an increase in insecurity in Donetsk, Ukraine as a result of the armed conflict.

INFECTION PREVENTION AND CONTROL

- Most of the support and investment of the department was dedicated to the interventions in the Ebola outbreak in West Africa. Protocols for Infection Prevention and Control (IPC) were adapted for such specific settings
- Although a huge effort has been done in the last years regarding the implementation of the standard precautions for IPC, there is still a huge gap between the knowledge gained and the implementation of the IPC practices in the reality.
- There is a need to emphasize on the monitoring of IPC activities in order to prevent health care associated infections. Up to today there is no suitable tool for this purpose that could be used in resource-limited settings.

INTENSIVE CARE

- The focus of OCB is to achieve a good standard of care in basic level Intensive Care Units (ICU).
- The three ICUs reporting data in 2014 were from the two trauma centres (Kunduz, Afghanistan and Tabarre, Haiti) and the only specialized paediatric ICU (Gondama Referral Centre (GRC), Sierra Leone; closed due to the Ebola outbreak in October 2014). A total of 1,737 admissions were reported in the year 2014.
- The Kunduz and Tabarre ICUs operated as level 2+ services, which is a high standard of technically complex care provision with invasive mechanical ventilation being currently the most challenging activity. The GRC ICU continued to face high mortality rates, but with a focus on the upgrading of level of care in the second semester, mortality had dropped from 26% in 2013 to 20%.
- Nursing care training, in particular bedside training and development of standardized approaches, played an essential role in achieving quality care standards.

LABORATORY

- Laboratory activities were supported in 27 projects in 19 countries; the major areas receiving laboratory support were HIV/TB, and hospital services including transfusions.
- Viral load testing increased to approximately 50,000 tests either through direct use of bio-Mérieux instruments or by sending dried blood spot (DBS) samples to an external laboratory. Although this is very positive, it is clear that "having the test is not enough" and that successful implementation requires comprehensive co-ordination.
- The CRAG lateral flow assay, for the diagnosis of cryptococcosis, has been implemented in most HIV projects. Validation of the CrAg LFA in finger prick whole blood has allowed decentralization of the test, and the project in Lesotho has taken the lead to pilot its implementation at

clinic level where it is performed by lay counselors.

MALARIA

- A total of 514,876 rapid diagnostic tests (RDTs) were performed in OCB projects with positivity rates ranging from 57% in South Sudan to 71% in CAR.
- Out of the total number of malaria cases reported in OCB projects, the proportion of confirmed malaria cases has continued to increase over the years, standing at close to 100% in 2014.
- There were 278,009 confirmed malaria cases treated in OCB projects – an increase of 26% compared to 2013; 90% of these cases were treated in four missions only: Central African Republic (CAR), South Sudan, DRC and Niger. Severe malaria cases comprised 6.4% (> 14,000 cases) of the total malaria cases.
- Two countries (South Sudan and DRC) were confronted with malaria emergencies.
- A pilot project focusing on the elimination of artemisinin resistance/tolerance was launched in Cambodia. This involves a Targeted Malaria Elimination component together with a screening and treatment strategy, using polymerase chain reaction (PCR) as the diagnostic tool and Dihydro-artemisinin/Piperaquine as preventive treatment.
- A prevalence congenital malaria study in Burundi showed a very low PCR prevalence (0 - 1.3%)
- Injectable artesunate has been successfully implemented in our projects and is confirmed to be effective and easy to use among Ministry of Health (MoH) medical staff in Burundi. In contrast, rectal artesunate remains underused in our projects and this needs addressing.
- Seasonal Malaria Chemoprevention (SMC) was scaled up in Niger with a total of 271,444 doses of preventive treatment (SP/AQ) being distributed to children between the ages of 3 and 59 months. However, other preventative measures - namely the distribution of long lasting insecticide treated nets (LLINs) - is not always implemented correctly in our existing projects or during emergencies.
- Knowledge/implementation gaps and areas for improvement still exist in relation to rapid diagnostic tools, the MSF-policy on malaria in pregnancy, malaria transmission in contexts such as South Sudan and DRC, and effective pharmacovigilance systems during interventions such as SMC or mass drug administration.

MEDICAL STRUCTURE- INPATIENT DEPARTMENT

- The total number of structures with an inpatient department (IPD) in OCB has increased over the course of 2014: inpatient care was provided in 22 IPD structures (excluding Ebola emergency projects) and in seven emergency missions.
- The total bed capacity of OCB in stable contexts was 1,203, catered for by a total staff of 3,944.
- The Gondama Referral Centre (GRC) in Bo, Sierra Leone, and the hospital in Masisi, DRC were the largest hospitals in OCB in terms of

admissions, staff and bed numbers. Kunduz (Afghanistan) and Tabarre (Haiti) had relatively high staffing levels due to the complexity of their setup (as trauma hospitals).

- The PATIO system is proven to be a relevant tool to support hospital projects in the field in terms of design and planning of inpatient care activities.

MENTAL HEALTH

- Mental health (MH) activities were provided in 44 projects in 2014 (versus 33 projects in 2013). This increase was due mainly to the large increase in MH interventions during emergencies (15 emergency projects in 2014 versus 8 in 2013). This was mainly due to the Ebola outbreak in Western Africa along with the crises related to conflict in South Sudan and Ukraine.
- Contrary to last year, MH activities this year were implemented right at the beginning of the emergency interventions, showing better overall integration of MH activities during emergencies.
- In Lebanon and the Central Africa Republic (CAR) the emergency MH activities extended into longer term activities due to continuing instability. In Syria, Libya and South Sudan-Gumruc however, MH activities were stopped due to security reasons.
- MH activities for improving migrant health and well-being were increased in Cairo (Egypt) for victims of torture/ill treatment/sexual violence (SV) and at Shatila camp in Beirut (Lebanon) where SV care was included in maternity services for Syrian refugees. An extensive exploratory mission was also undertaken in the Balkans to better understand migration routes and the conditions of transiting migrants and to inform operations in the coming year.
- To better address the MH needs of children, several projects started providing MH activities specifically for children. In addition, an International guideline on MH and psychosocial care for children was drafted at the international level.
- With more psychiatry being practised in our projects, this demands more psychiatrists in the MH pool together with innovative approaches (such as that implemented in the Philippines where we showed that task shifting the diagnosis and treatment of common MH disorders from psychiatrists to general doctors, is possible).
- As the demand for MH activities in our projects increases, maintaining a large enough human resource pool is essential. However, this is a major challenge as there are few first time mission positions for psychologist/psychiatric available.

NUTRITION

- 19 nutritional projects across 12 countries were managed by OCB; only two new projects were opened in CAR, while one program in South Sudan was closed and handed over. Some programme activities were interrupted due to security constraints (Pibor County, Jonglei, South Sudan) or due to the Ebola outbreak (Bo, Sierra Leone).
- 24,890 patients with severe acute malnutrition (SAM) were admitted to Intensive or Ambulatory

Therapeutic Feeding Centres, representing the lowest levels since 2008. No General Food Distributions were done in 2014.

- The high percentage of children with SAM requiring hospitalisation in Afghanistan, CAR and Gogrial in South-Sudan, is explained by the fact that nutritional activities were provided mainly in the hospital setting, so the majority of cases were treated in inpatients paediatric wards.
- The decrease in the volume of nutrition activities created difficulties to find settings for innovation, pilot projects and maintain experienced expatriates.

OPERATIONAL RESEARCH AND DOCUMENTATION

- The Operational Research (OR) unit supported the emergency pool during the Ebola emergency response in West Africa in a number of areas such as field support, helping to cover gaps in field epidemiologists through SORT-IT (Structured OR Training- Initiative) alumni and coordination of the MSF OCB OR agenda.
- The Operational Centre Brussels (OCB)-supported publication outputs reached 120 peer-reviewed journal articles, with diversification into 14 thematic areas. Sixteen percent of these included publication support to collaborating Ministries of health and non-governmental organisations (NGOs).
- The impact of OR on policy and practice was evaluated through two early assessments. The results showed that 74% of OR studies had a direct impact on program implementation and 62% of OR course participants continued with research activities after course completion.
- A firm position to promote open access for scientific publications was reflected in an advocacy article led by the OR unit with wide stakeholder involvement.
- OR courses supported by Luxembourg Operational Research Unit (LuxOR) under a global partnership umbrella termed SORT-IT (Structured OR Training- Initiative) were scaled-up to 70 low-and middle-income countries in 2014.
- Since 2010, the MSF Field Research website (www.fieldresearch.msf.org) has had 430,000 publications (close to half a million) downloaded from around the world.
- A workshop on OR was conducted at the European Parliament, highlighting the role and relevance of OR (an area that remains neglected both in terms of recognition and funding in the European Union (EU)) and bringing it to the attention of politicians in Europe.

PAEDIATRIC CARE

- 522,096 (38%) of all outpatient consultations and 32,382 (58%) of all hospital admissions in OCB were for children under five.
- The leading causes of morbidity for paediatric outpatients were similar to the previous years: respiratory tract infections (38%), malaria (22%) and non-bloody diarrhoea (16%); for paediatric inpatients, the major morbidities were severe malaria (41%), lower respiratory tract infections (21%), neonatal diseases (13%), and non-bloody diarrhoea (7%).

- The leading causes of paediatric inpatient mortality (slightly different from 2013) were severe malaria (34%), neonatal diseases (33%), lower respiratory tract infections (8%), suspected septicaemia (4%) and severe acute malnutrition (2%).
- Although progress was made with neonatal mortality, decreasing from 38% (2013) to 34% of all under-five inpatient mortality, implementation of neonatal care remained a significant challenge in the field, regardless of the level of care.
- A study on the medium-term outcomes of neonates was performed in 2014 (to be published in 2015) and will provide recommendations for a more holistic approach.
- In November 2014, activities at the GRC in Sierra Leone were suspended due to the Ebola crisis, bringing to a standby the 5-year vision of a paediatrics hospital project in Bo Sierra Leone.

PHARMACY

- The continuing emergencies in Syria, Central African Republic (CAR), the emergency in Ukraine, and increased MSF activities in countries with import constraints continued to represent significant challenges to the medical supply chain.
- The development of pharmaceutical regulations in developing countries, while in principle positive, has generated importation constraints as developing countries are not yet able to enforce international standards of quality on their local markets and their laboratories often lacking capacity and budget for quality control activities leading to batches of medication in quarantine.
- An evaluation of the local pharmaceutical market was conducted in nine countries: nine manufacturers were approved in five countries, and 55 wholesalers were approved in all nine countries. One manufacturer and 22 wholesalers were not approved.
- During 2014 there were 62 full time pharmacy positions of which 55 were qualified pharmacists. 100% coverage of pharmacist positions was reached.
- Two batch recalls and four quality alerts concerning OCB projects were issued and 15 product (four procured locally) quality-related problems were reported and investigated.
- Total expenditure for medical procurement was 28.6 M €, with an additional 0.7 M € for therapeutic food. Personal protective equipment (PPE) accounted for over a 2.5 M €. Drug expiries accounted for 870, 000 € and non-planned donations accounted for 1.5 M €.

SEXUAL AND REPRODUCTIVE HEALTH

- Deliveries were conducted in 22 projects, all of which offered emergency obstetric care and 12 provided Caesarean sections and blood transfusion. 61,172 deliveries were performed; 4,028 of which by Caesarean section. Afghanistan, with its two projects (Khost and Ahmad Shah Baba (ASB) hospital) covered nearly half of all deliveries in OCB.
- Antenatal and postnatal care was offered in 21 projects: 159,363 antenatal consultations and 26,203 postnatal consultations were per-

- formed – full antenatal care coverage (four visits during pregnancy) and postnatal care consultations remained low.
- Family planning was offered in 24 projects and 58,686 family planning consultations were conducted.
- Termination of pregnancy on request was offered in 10 projects and was provided for 222 women – a tremendous decrease compared to 2013 (>50%). Willingness of staff remained a challenge to overcome, despite the many efforts made during the various SRH related courses.
- Care for survivors of sexual violence was offered in 17 projects: 2,875 cases were seen.
- The rolling out of decentralized and tailor-made Advanced Life Support in Obstetrics (ALSO) courses in MSF projects was well-received by the participants. This is an intersectional course which uses trainers from the different operational centres (OCs).

SURGICAL ACTIVITIES

- Surgery in OCB focused on providing 1) essential, life-saving surgery, with low-tech requirements; 2) high-standard orthopaedic care in selected projects; and 3) specialised surgical care to women with obstetric fistula in various locations.
- Operating department data coverage and quality continued to be high.
- By the end of 2014, there were 12 OCB projects offering surgical care: over the course of the year, three projects conducting surgical care were opened or newly started, and four were closed.

- 12,005 new surgical cases were seen and 21,730 surgical procedures were performed.
- Surgical data and indicators were influenced by the relative expansion of the two trauma centres (Kunduz, Afghanistan and Tabarre, Haiti), which have a specific typology of interventions.
- An excellent quality indicator of anesthesia provision (88%) has been achieved in 2014.

VACCINATION

- About two thirds of the medical OCB projects reported vaccination activities in 2014. A total of 1,052,089 doses of vaccine were administered, which amounts to a 10% reduction compared to 2013. Only 33% of the doses were given in routine vaccination. More than half (58%) of the doses were given in reactive mass vaccination campaigns (vs 45% in 2013).
- Vaccination activities were mainly offered in outpatient and inpatient departments (78%) and at antenatal consultation (17%), and were also reported in nutrition activities (6%). There is still an outstanding lack of integration of routine vaccination in HIV projects.
- Among children under five, Polio was the most administered antigen (32%) in routine activities, followed by the pentavalent (diphtheria-pertussis-tetanus-Hepatitis B-Haemophilus influenzae type B) vaccine (25%) and measles-containing vaccines (18%).
- Preventive and reactive vaccination campaigns accounted for respectively 5% and 58% of all OCB vaccination activities, while post-exposure prophylaxis accounted for 4%.

- New Missed Opportunity evaluations were conducted in South Sudan, DRC, Pakistan and Niger, allowing the projects where it was implemented to monitor the activities and to respond to gaps in routine vaccination. Staff in the field was trained on the objectives and correct use of the tool. The results of the evaluations were presented in the MSF-OCB OR Day in 2014.
- A new approach to measles outbreak response (“coup de poing”) was tested in Democratic Republic of Congo (DRC) and showed promising results.

WATER, HYGIENE AND SANITATION

- Most of the efforts in 2014 were devoted to support the MSF activities for the Ebola outbreak in West Africa, with the presence of at least one member of the unit in the field throughout the outbreak.
- Other specific WHS activities included: the emergency response following Typhoon Haiyan in the Philippines, supporting migrants' transit and detention centres in Balkans and Greece, working on improving the water quality and network in Tabarre hospital in Haiti, collaboration on the diagnosis and repairing of the existing dysfunctional boreholes in Niger, and implementing the minimal water, hygiene and sanitation requirements in the MSF state-of-art hospitals.
- A focus was placed on providing expert WHS support to established missions, while the WHS needs in complex emergencies were managed by polyvalent technical staff with technical support from headquarters.

BIOMEDICAL EQUIPMENT

1. OVERVIEW

With the increase of complex surgical programs, demanding fully equipped reference hospitals, more advanced research and diagnostic equipment has been introduced over the last few years. This led to a substantial need for specialized technical support, but this is a challenge. Mid 2014, after a gap of several weeks for the biomedical Mobile Implementation Officer (MIO) position, a replacement was recruited which helped to mitigate some of the challenges but as there was a gap as well for the referent position during a few months, field visits with follow-up of equipment were limited. There was also a set-back in the pace of building up a knowledge base and reference documents for new devices that were supposed to be introduced in 2014.

Attempts to offset this situation have included training of national staff in several missions to better oversee the management of biomedical equipment and standardization of the large array of equipment that is found in the different projects.

2. PROGRAMME ACTIVITIES

2.1. TECHNICAL SUPPORT

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.
- One or more technicians must be trained and responsible for the monitoring of the equipment.
- Maintenance and upkeep must be planned for and carried out as recommended.
- Workshops must be planned for and undertaken for conducting maintenance.
- All maintenance activities must be recorded.
- Stocks of spare parts must be maintained, and the follow-up of inventories and orders must be ensured.

Priority is still given to those missions with large hospital projects having complex biomedical equipment. By the end of 2014, it is clear that although most missions have the minimum requirements in place (e.g. Democratic Republic of Congo (DRC), Haiti, Afghanistan, Pakistan, South Sudan, India, Sierra Leone) follow-up is lacking and the responsibilities between both the medical and logistical staff in the field are still not clear.

In 2014, an intersectional set of protocols including user maintenance (medical), preventive maintenance and troubleshooting guides (logistical) have been introduced for the most common equipment in the field through biomed trainings and field visits.

2.2. FIELD VISITS

A number of field visits were undertaken in 2014. The referent visited the missions in Pakistan and Afghanistan, while the MIO provided technical support to the following health structures:

- The health structures of the Kabul, Kunduz, Khost and Lashkar Gah (Helmand) and Ahmad Shah Baba (ASB) projects in Afghanistan. The visit was partly a 3-month gap-filling of the biomed referent position in the mission.
- The health structures of the Gogrial and Maban (Doro) projects in South Sudan.
- The health structures of Martissant and Tabarre in Haiti.

3. INTERSECTIONAL COLLABORATIONS

The biomedical contact group has developed greater visibility and voice 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 meet-

ings include the diagnostic imaging working group in order to improve the use and maintenance of radiology equipment.

4. TRAINING AND HUMAN RESOURCES

Informal training in the field – tailored to the contextual needs of the field - comprised the most part of the biomedical training agenda. Formal trainings included:

- Two five-day biomedical training courses, set up in collaboration between OCA, OCB and OCG. This is being held at the EBC training centre in Brussels. There were 13 participants in the French training and 11 participants in the English one. Priority is given to national staff, but expats that are involved in hospital logistics or need to prepare for a referent position are accepted as well.
- The biomedical equipment module has been included in the Preparation for Departure (PPD) course.
- Specialized ad-hoc trainings for lab equipment for some missions using complex devices.

LESSONS LEARNED IN 2014

As for the past 3 years, the provision of adequate support in missions where complex equipment is used (particularly specialised laboratory instrument and radiology equipment) remains a challenge. Maintenance of advanced laboratory instruments and radiology equipment requires specialised training, specialised tools and accessibility of spare parts. Within MSF, the technical competence is (still) lacking and local service providers are often unable to meet the maintenance needs of specific equipment. This has prompted MSF, at an intersectional level, to negotiate service contracts with the relevant equipment manufacturers for provision of the required service through local providers. These collaborations have been difficult and rarely resulted in an adequate support, mainly due to a poor follow-up from manufacturers on their affiliates in low resource settings. Ongoing negotiations with the manufacturers will hopefully result in a better support.

The issues of long delays encountered when equipment has been sent to Brussels for repair, still needs to be resolved in collaboration with MSF Supply.

PROSPECTS FOR 2015

Technical support will continue to be provided both to those missions with the minimum biomedical equipment requirements already in place (that require follow-up visits), and to new missions that need support implementing the biomedical equipment management system.

In 2015, a series of documents will be released including:

- A reference tool to aid inventory keeping, planning of maintenance activities and ordering of necessary parts.
- Biomedical Policy and Guideline for OCB.
- The new intersectional X-ray manual.

An ongoing study of after sales services for biomedical equipment will result in the implementation of a new service for after sales within the logistical department and MSF Supply.

Together with the infection control team, a push for user maintenance and correct use of the equipment will be made throughout the missions of OCB.

Also, after further discussions with the logistics training team, the need for a new biomedical equipment module was reconsidered as essential and therefore will be re-introduced during the BLoC-week (basics logistics course).

EBOLA OUTBREAK

WEST AFRICA

1. OVERVIEW

On March 21st, blood samples taken from sick patients in Forested Guinea proved to be positive for Ebola-Zaire, a highly fatal type of haemorrhagic fever. On the March 27th, four suspected cases in Conakry, the Guinean capital, were confirmed as Ebola Virus Disease (EVD). The Guinean Ministry of Health (MoH) immediately requested support from MSF for case management and outbreak control. Although another type of haemorrhagic fever, Lassa fever, occurred in the region, this represented the first time that an Ebola outbreak touched this part of West Africa. Ebola Treatment Centres (ETC) were rapidly opened in Conakry (Donka), Guéckédou, Macenta and Télimélé. Cases were also confirmed in the neighbouring countries of Liberia (in Foya, in the border region with Guinea) and Sierra Leone (Kailahun, also the border region), where the MoH also requested support from MSF.

The outbreak briefly seemed under control by the end of June/beginning of July, and then changed face dramatically in the first weeks of August, with an explosion of cases and weekly admission numbers increasing five to tenfold. At the same time the situation deteriorated rapidly in Sierra Leone and Liberia: in Sierra Leone, an ETC was opened in Kailahun in June, and in Bo in September. In Liberia, ETCs were opened in Foya and in Monrovia (Elwa3) in August. In August/September, caseloads increased to the point that some ETCs were temporarily filled to capacity, and found themselves in the dire situation of having to turn away patients. In order to be able to focus resources to cope with the persistently high admission numbers, Foya ETC was handed over to MSF-OCG by the end of August, and Kailahun and Bo ETC's to MSF-OCA by the beginning of October and end of November respectively. By the end of 2014, caseloads were dwindling in Liberia and Sierra Leone, while Guinea continued to see intermittent flaring up of the outbreak. Despite the decreasing numbers, the outbreak was not under control in any of the three countries.

The general strategy to control EVD, applied in previous outbreaks, consists of six pillars that need to be put in place in a comprehensive way (and at the same time):

1. **Isolation and supportive medical care** for cases – including laboratory capacity to be able to confirm cases, and including psychosocial support for patients/families.
2. **Safe burial** activities (in the isolation units and in the community).
3. **Awareness** – including activity of understanding community behaviours (Health Promotion (HP) and anthropological support).
4. **Alert and Surveillance** in the community – i.e. active case finding and analysis of the active chains of transmission, and including disinfection activities when a case is found in the community.
5. **Contact tracing** – follow-up of contacts of confirmed cases, and ensuring their timely isolation if they become symptomatic.

6. **Health care for non-EVD cases** – including protection of health facilities and health workers (triage, infection control, capacity to react in case EVD enters the structure).

In general, some pillars were implemented rapidly and were maintained throughout the outbreak, while others suffered from delays and from impartial implementation (either by MSF or by other actors). Isolation and case management (supportive and palliative care) were provided throughout, in the three countries. By the end of 2014, in the ETCs of Guinea (Guéckédou, Macenta, Donka, and Télimélé) a total of 3143 patients had been admitted, among who 1698 were confirmed with Ebola, 992 died and 716 recovered. In the ETCs of Liberia (Elwa3 and Foya), 2512 patients had been admitted, 1607 were confirmed, 999 died and 645 recovered. In Sierra Leone (Kailahun and Bo ETCs), 1673 patients had been admitted, 1284 were confirmed, 555 died and 716 recovered. The unprecedented scale of the outbreak in terms of geographical spread, number of cases and

number of victims, forced the MSF teams to concentrate their efforts on the isolation of sick patients from the rest of the community and the provision of supportive and palliative care. Throughout, MSF expert teams worked alongside the MoH on these activities while training and supporting them with their own Ebola response activities. Likewise, awareness raising through HP and anthropological work were provided by MSF all through the intervention in 2014.

Pillars which were not fully covered by MSF included safe burial practices and house disinfection (mainly managed by the national Red Cross and MoH, with MSF providing training of burial teams in some locations and handling the safe burials of the MSF ETCs), and surveillance, which consists of case investigation, issuing of alerts and contact tracing, and represents a key activity in outbreak control. MSF did not manage to cover surveillance in all settings: in Liberia, MSF implemented all pillars in Foya, but only started outreach activities in Monrovia in November, when the pressure on the ETC de-

creased. In Guinea, MSF covered all the pillars in Guéckédou, with the support of other organisations, but only started outreach in Conakry in 2015. In Sierra Leone, too, the full package of activities was set up relatively late and temporary stopped because of lack of experienced people, the workload in the ETC, and infection of staff.

It is important to note that the Ebola crisis should not be viewed in isolation: while numbers for the sick and dead are shocking, there lay far greater problems behind these numbers. The health services of Liberia and Sierra Leone are in tatters; health care workers have died, clinics are closed and many people are unable to access basic health care for other health issues. Treatable diseases such as malaria and diarrhoea have likely killed far more people than Ebola. Until Ebola is stopped, the health care systems, fragile at the best of times, will not function.

2. EMERGENCY ACTIVITIES IN 2014

Overall data from the ETCs managed by OCB is presented in table 1, and case fatality rates in the major OCB ETCs are provided in table 2. Country-specific activities are discussed below.

2.1. GUINEA

2.1.1. General setting

Directly after the first cases were confirmed, an MSF team that was already based in Guéckédou (the epicentre of the outbreak) for a malaria project, put in place an ETC, staffed with a team from the Sierra Leonean Lassa fever mission, before a full specialized team arrived from Europe. Shortly afterwards, additional ETCs were opened in Macenta and Télimélé, evaluations were done in Kissidougou and Dabola, where small ETCs were set up next to the MoH hospitals, and a larger ETC (45 beds) was set up in Conakry (Donka). The centres of Macenta, Kissidougou, and Dabola, and the MoH struc-

Table 1: Cumulative number of EVD patients admitted, lab confirmed and main outcome by ETC in the West Africa Ebola outbreak, 2014

ETC	Admitted	Confirmed	Died	Recovered
Bo*	444	414	157	246
Donka	1,365	533	274	269
Guéckédou	1,610	1,067	636	430
Kailahun*	1,210	857	395	466
Monrovia-ELWA3	1,800	1,216	745	491
Total	6,429	4,087	2,207	1,902

* Kailahun and Bo included data after hand over to MSF-OCA

Table 2: case fatality rate (%) of EVD per ETC and per age-group in the West Africa Ebola outbreak, 2014

ETC	Age-groups				All ages
	<5y	5-29y	30-59y	60+y	
Bo*	61.1	33.5	42.9	50.0	39.5
Donka	81.3	31.8	52.1	58.6	44.0
Guéckédou	73.2	49.7	60.3	72.8	58.1
Kailahun*	51.9	37.2	52.2	52.8	44.9
Monrovia-ELWA3	60.0	50.3	60.0	76.9	56.2
All centres	66.0	44.1	56.5	67.8	52.0

Case fatality rate was calculated by excluding from the denominator defaulter and transferred patients.

* Kailahun and Bo included data after hand over to MSF OCA

tures supported by MSF were soon put on standby. In Guéckédou, the number of patients in the MSF ETC had declined in July, to escalate again in August. In September and October, the number of cases rose for the third time in Guinea, reaching a new unprecedented peak. A new ETC (70-bed facility in full capacity) was built by MSF in Macenta, where MSF teams trained the French Red Cross staff before handing over the centre in November. By the end of the year, the numbers of cases seemed to decrease again, but caution was maintained as the outbreak in Guinea has followed a saw-tooth curve since the beginning. The two major centres at end of the year were Donka (foreseen to be replaced by a new structure early in 2015) and Guéckédou (which was rehabilitated throughout the year). In addition to the ETCs, the other pillars of EVD control were being reinforced, and two Rapid Response Teams

were developed to assess areas where cases appeared and implement the pillars when appropriate.

2.1.2. Main activities

The main data of the Guinea ETCs and transit centres for 2014 is provided in table 3, and the evolution of the confirmed cases is shown in figure 1. In Guéckédou, all pillars of EVD control were implemented: outreach teams performed 598 interventions, referring 485 patients, distributing 239 solidarity kits, managing 190 community burials, and disinfecting 342 houses and other sites.

2.2. SIERRA LEONE

2.2.1. General setting

In June, MSF opened an ETC in Kailahun and two transit centres in Daru and Koindou.

Table 3: Epidemiological data of the ETCs and transit centres in Guinea, in the West Africa Ebola outbreak, 2014

	Open date (beds)	Date of info	Admissions	Confirmed	Deaths	Recovered
Conakry Donka ETC	25/03 (85)	29/12/14	1,463	594	300	290
Guéckédou ETC	23/03 (87)	29/12/14	1,634	1,076	645	430
Macenta ETC	Apr-May	1 st outbreak	11	7	5	2
Macenta Transit*	May-Nov	Closed 18/11/14	509	-	37	-
Télimélé ETC	-> end July	1 st outbreak	35	21	5	16

ETC: Ebola Treatment Centre

* confirmed and recovered cases of transit centres are included in the referral centre

Figure 1: confirmed EVD cases admitted to the Guéckédou and Donka ETCs in the West Africa Ebola outbreak, 2014

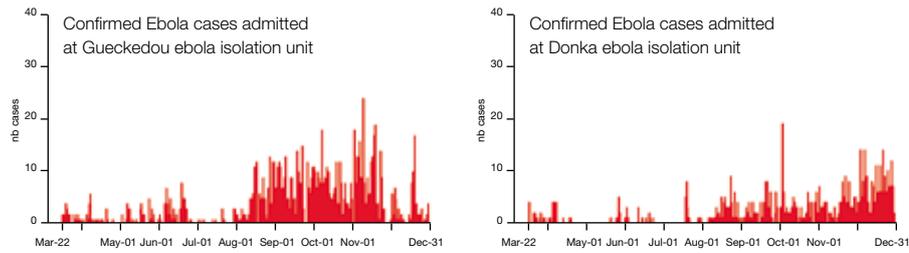
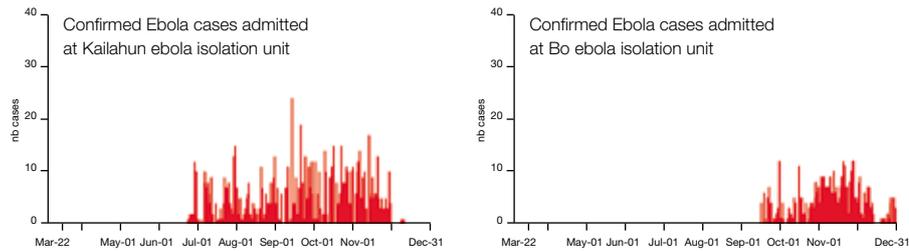


Figure 2: confirmed EVD cases admitted to the Kailahun and Bo ETCs in the West Africa Ebola outbreak, 2014. Data post-handover to OCA is included.



While the number of beds of Kailahun centre had to be increased to 65 beds and later to 85, the Daru and Koindou units were soon handed over to the MoH. In July, the obstetric activities in the regular project of the Gondama Referral Centre (GRC) in Bo district were placed in standby, and in October all activities (including paediatrics) were placed in standby, as basic safety measures could not be provided to staff and risk of infection was too high. In July, a transit centre was built near to the GRC, and in September a full ETC was opened in the district. The ETCs of Kailahun and Bo were handed over to OCA in October and November respectively.

2.2.2. Main activities

The main data of the Sierra Leone ETCs and transit centres for 2014 is provided in table 4, and the evolution of the confirmed cases is shown in figure 2. Outreach activities were started in July in Kailahun, but because of several biosafety incidents the team was obliged to place activities on standby.

2.3. LIBERIA

2.3.1. General setting

A limited number of EVD cases were reported in Foya, Lofa County in April, and a small ETC was put in place, but was rapidly placed in standby as no new cases were reported. The capacity of this centre was expanded in June when new cases were being reported, and was handed over to Samaritans Purse in July following extensive training of Samaritans Purse staff. OCB staff stepped back in again when Samaritans Purse evacuated, and set up an additional transit centre in Voinjama – by the middle of August, both Foya and Voinjama were taken over by OCG.

In the meantime, cases had spread very quickly to Monrovia (with a population of 1.3 million inhabitants): OCB started out by supporting the MoH structure Elwa2, and by mid-August was managing the 120-bed ETC of Elwa3. The centre was full as soon as it opened, and teams worked day and night to increase the capacity with 40 beds every week. The bed capacity increased up to 240,

with the capacity to reach 400 if necessary. The intervention in Monrovia needed continuous adaptation, as the influx was so high and the response by other actors remained lacking, even in September in the peak of the outbreak. OCB capacity was reached, and much effort was invested in advocacy and public communication for other actors and the international community to intervene. In addition to patient care in Elwa 3, an innovative approach was trialled on the distribution of “household protection kits” to families in the city (cf. §2.3.2.). By the end of the year, patient numbers were decreasing considerably across the country, and Elwa3 was downscaled to 60 beds. Similarly to the other countries, the other pillars were reinforced, and Rapid Response Teams were deployed where needed (cf. §2.3.2.).

2.3.2. Main activities

The main data of the Liberia ETCs for 2014 is provided in table 5, and the evolution of the confirmed cases is shown in figure 3. Elwa3 was arguably one of the most visible ETCs in the West Africa outbreak, as it represented the largest ETC to date (maximum capacity of 250 beds, potential to expand to 400), served as a training site for non-MSF staff (50 staff trained), and was the focus of much attention when its capacity was reached just after opening, necessitating patients to be turned away. At the ETC, in addition to case management and isolation, a total of 3,937 psycho-social support sessions were conducted for patients and families.

In Monrovia, in parallel with the management of Elwa3 as largest ETC to date, HP and other community activities were conducted. Community mobilisation/HP was performed to increase the knowledge on EVD transmission and prevention, ensure that appropriate care was sought, and improve the MSF knowledge on local practices potentially contributing to transmission. The HP teams consisted of 10 HP team leaders (MSF and MoH), 26 HP supervisors, and 422 Community Health Volunteers, primarily carrying

Table 4: Epidemiological data of the ETCs and transit centres in Sierra Leone, in the West Africa Ebola outbreak, 2014

	Open date (beds)	Date of info	Admissions	Confirmed	Deaths	Recovered
Kailahun ETC**	26/06 (104)	29/12/14	1,212	857	395	466
GRC Transit*	22/06	Closed 19/09	29	16	10	2
Bo ETC**	19/09 (104)	29/12/14	461	427	160	250

ETC: Ebola Treatment Centre; GRC: Gondama Referral Centre

* Confirmed and recovered cases of transit centres are included in the referral centre

** Kailahun and Bo included data after hand over to OCA

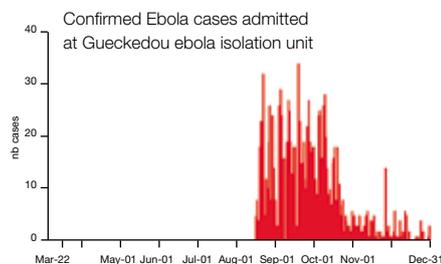
Table 5: Epidemiological data of the ETCs in Liberia, in the West Africa Ebola outbreak, 2014

	Open date (beds)	Date of info	Admissions	Confirmed	Deaths	Recovered
Foya ETC*	02/08 (10)	Closed 09/12	695	384	252	154
Elwa 3 ETC	18/8 (240 -> 60)	31/12/14	1,822	1,224	747	496
Quewein ETC	06/12 (15)	11/12/14	10	7	3	0

ETC: Ebola Treatment Centre

*Foya included data after hand over to OCG

Figure 3: confirmed EVD cases admitted to the Elwa3 ETC in the West Africa Ebola outbreak, 2014.



out door-to-door awareness activities. A total of 175,549 households (approximately 1.2 million individuals) were reached by the HP teams (>90% of the target population). In the process, 24 community-based organisations (266 individuals) were trained by MSF. In addition to the mobilisation/HP activities, a distribution of household protection kits was conducted. These kits contained, amongst others, chlorine, soap, gloves, masks, and gowns, as well as an information leaflet. The main objective was to reduce transmission at the household level, by ensuring the protection of caretakers of cases in the home while the family waited for the ambulance or in the event of no bed capacity. Its use was promoted by the information leaflet, and by group sessions and during community volunteer visits to households. Two strategies were deployed: targeted distribution to prioritised groups (health care workers and known contacts and family members of cases), and mass distributions to selected communities (based mainly on the socio-economic indicators of the different areas in Monrovia). Between September 9th and November 12th, 65,109 kits were distributed (9,572 targeted and 55,537 mass distribution).

Another activity conducted in Liberia, once the pressure on the ETC decreased, was the deployment of Rapid Response Teams to deal with hotspots of active transmission in the country. By November, such teams had not yet been implemented by the MoH, and MSF developed a setup in which a team could be deployed in 24 hours anywhere in the country, to set up the six pillar strategy locally. Rapid responses were mounted in

River Cess/Gozoehn (two waves of transmission, base with 16 staff established, 9 deaths and 8 confirmed cases) and in Grand Bassa/Quewein (one wave of transmission, base with 16 staff, 7 deaths and 9 confirmed cases). Technical support was also provided to rapid response interventions in Sinoe, Greenville by the Swedish Civil Contingency Agency (MSB), and in Grand Cape Mount.

3. HUMAN RESOURCES AND TRAINING

A total of 775 international staff were sent to the three countries – out of these, 16% were administrative staff, 29% logistic, 22% medical and 34% paramedical. Most (43%) departed for Guinea, followed by Liberia (31%) and Sierra Leone (25%) – the handover of all activities in Sierra Leone to OCA contributed to this lower proportion. Recruitment of national staff was considerable in all countries – in Guinea, staff from the regular mission was initially detached to the EVD response, and was supplemented with continuous recruitment throughout the year - by the end of 2014, 715 national staff had been recruited (31% medical staff). In Liberia, staff was hired on daily worker basis from the period of July till the end of October. From November onward, staff was put under short-term employment contract until the end of the year – 628 staff had been recruited by the end of the year (32% medical). In Sierra Leone, 774 national staff were employed, 33% of which medical.

MSF was involved in trainings at various levels, both at HQ and at field level. In the ETCs, the teams trained international and national staff from other organizations, including in isolation/high risk areas (also called *hot training*). Additionally, MSF also provided technical advice on a many different topics for other actors setting up ETCs, through technical visits of support including recommendations. Documents, protocols, guidelines, training materials were also widely shared with other actors. As limited experience in managing EVD or running an ETC existed among national or international staff outside

of MSF, a unique decision was taken to also provide training at HQ level for other actors as well as for international MSF staff, in order to rapidly increase the pool of EVD-experienced staff. This so-called First Responders training, with as objective to ensure that all trained staff had sufficient knowledge of the disease and its transmission routes to adopt a safe behaviour and work efficiently in an ETC, relied on lectures by EVD-experienced staff, and practical training in a mock-up ETC in the Espace Bruno Corbé (EBC) training centre of OCB. 21 sessions were provided between August 2014 and February 2015 onward, relying on 70 facilitators (11-17 per session), and training a total of 717 individuals (average 34/session). 68% of these were MSF staff (from different sections), 23% staff from other NGOs, and approximately 10% represented governments, UN agencies, or medical evacuation agencies.

4. SUPPLY

Huge supply efforts were done to cover the needs in the fields (table 6). One of the major issues was the availability and the high request for personal protective equipment (PPE). Other articles (such as body bags and chlorine) were also an issue, in particular during the summer. MSF Supply managed to cover the needs throughout, and increased its capacity to the highest limit. MSF Supply was also able to cover the production of disinfection and protection kits for the distribution in Monrovia. In addition to the project supplies, a helicopter was rented by MSF in order to ensure rapid evacuation of infected staff (national and international) from rural projects to country capitals.

5. INNOVATIONS AND (OPERATIONAL) RESEARCH

The unprecedented scale in terms of numbers and geographical spread required much adaptation and innovation in the response. In particular, adaptation of care to the overwhelming numbers encountered in August-October required fine-tuning of the different levels of standardised care. Furthermore, the

Table 6: MSF Supply volumes in the West Africa Ebola outbreak, 2014

	Volume (m ³)	Weight (kg)
Guinea	1,785	349,404
Liberia	5,439	865,092
Sierra Leone	1,082	200,382
Total	8,306	1,414,878

high numbers of cases allowed description of specific groups of patients (pregnant women, children, etc.) on whom information had been sparse in previous outbreaks, due to the low numbers encountered. Specific aspects of the EVD guidelines that were updated included the paediatric guidelines, pregnancy and delivery guidelines, nutritional guidelines, logistic setup of an ETC, decommissioning guidelines, monitoring tools, biosafety tools for intravenous (IV) care, and others.

EVD-related research within OCB was built around two major axes: 1) research into therapeutics and prophylaxes, following a trial model, and with the possibility of identifying “game changers” such as a novel treatment or vaccine; and 2) operational research on components of the Ebola interventions in the different countries, aiming to identify

constraints in the programmes and providing incremental improvements to the intervention as a whole. For the latter, in-house capacity was used to conduct the studies, which were embedded in the interventions to the extent possible. Six manuscripts on EVD had been published by the end of 2014, and approximately 15 studies were in manuscript or revision stage.

Concerning novel therapeutics, research was galvanised into action after the overwhelming caseloads in the summer. Pre-selections of candidate therapeutics and development of ethical frameworks for trials were done at WHO level in August and September, and MSF advocated for rapid evaluations of potential candidates. MSF also agreed, for the first time in an emergency environment, to host clinical trials in its centres. Three thera-

peutic trials were initiated: one on favipiravir (started in Guinea in December 2014), one on brincidofovir (developed for Liberia in 2014, started in 2015), and one on the use of convalescent plasma (developed for Guinea in 2014, started in 2015). Additionally, when it became apparent that no other organisations were willing or able to host a vaccine trial in Guinea, MSF offered to act as hosting partner for a trial on the recombinant Vesicular Stomatitis Virus (VSV) vaccine from Merck, scheduled for March 2015. All trials were developed in a consortium approach, where MSF was not the sponsor or principal investigator, but retained full control of the clinical management of patients and the HP/communication on the trials.

6. PROSPECTS FOR 2015

By the end of 2014, the outbreak showed clear signs of decrease. However, the outbreak was not under control (defined as 100% of cases coming from known contact lists, and 100% of all contacts in follow-up tracing; i.e. all transmission chains known and under surveillance) in any of the countries, and considerable efforts will be required to fully control the outbreak, in particular in terms of surveillance and social mobilisation. The treatment and vaccination trials also only started by the end of 2014/beginning of 2015, and their results will have a considerable impact on this and in particular on future outbreaks.

There is still also a possibility that the outbreak flares up again in the future and/or that a few cases keep on appearing in some areas – prediction of how an EVD outbreak evolves in the short and longer term is nigh impossible. Formal evaluations, lessons learned and capitalisation will be of great importance as soon as the outbreak is over, but to avoid hasty conclusions, no formal lessons learned are reported on here.

EMERGENCY MEDICINE

1. OVERVIEW

Emergency care should be universally accessible and can make an important contribution to reducing avoidable deaths and disability in low- and middle- income countries (LMIC). The emergency department (ED) is the first point of contact for the majority of patients suffering from a medical emergency or life-threatening injury; therefore, an adequate investment for planning and improving organization of emergency medical systems is essential. Every country and community can and should provide emergency care services.

Delivering effective emergency and urgent healthcare in resource-limited settings is challenging. Difficulties exist at many levels: communication, transportation, available equipment and drug supplies, affordability and availability of skilled healthcare providers. In many of our settings with an ED component, MSF is the only provider of emergency care; strengthening the “on time” response and preparing our staff and services for an adequate delivery of emergency care is essential and should be a priority in all projects.

2. PROGRAMME ACTIVITIES

2.1. EMERGENCY DEPARTMENT STRUCTURES

Hospital-based ED, emergency care service integrated into a hospital, is the most common ED service found in MSF projects. This because being inside a hospital compound means that the service is backed by a complete care provision system, including an operating theatre and inpatient wards, where continuity of good quality care is assured.

Freestanding emergency units, where the ED is in a different location than the hospital services, are usually adopted in situations where hospital-based emergency services are inaccessible and/or distant from the target population. This arrangement should be well-planned, and good communication and coordination with previously assessed referral centres are essential, as these will be responsible for the ongoing care of the patients. During 2014, two EDs - Martissant in Haiti and Karachi in Pakistan - were operating as freestanding EDs.

2.2. ACTIVITIES AT PROJECT AND MISSION LEVEL

2.2.1. Emergency department activities

In 2014, emergency medical care was provided in 12 OCB projects across seven different countries: Afghanistan, Central African Republic (CAR), Democratic Republic of Congo (DRC), Haiti, Pakistan, Sierra Leone,

and South Sudan. The South African Triage Scale (SATS) was used successfully in seven projects.

During 2014, five projects that had an ED component were either closed or handed over to the Ministry of Health (MoH): Bura, East Imey, Nagaland, Niagara, and Jabal-Akkrad. Pibor in South Sudan passed through a difficult period, ending up in temporary closure, which led to a lack of information on the activities.

This report includes data from three new projects that were not reported in 2013: Bangassou and Ouango in CAR, and Bajaur in Pakistan.

A total of 223,062 emergency medicine consultations were performed in OCB during the reported period (table 1). More than half of all these consultations were done in Martissant, Haiti (59,024 consultations) and in Kabul, Afghanistan (56,580 consultations).

The proportion of patients younger than five differed according to the characteristics of the project: the highest proportion, as expected, was reported in the Gondama Referral Centre (GRC) in Sierra Leone (89.5%), a paediatric hospital; while the lowest proportions were observed in the trauma centres of Kunduz and Tabarre (8.4% and 7.5% respectively).

The proportion of female patients was >40% in all EDs, except in the trauma centres, where the number of male patients was approximately double that of the females. These ob-

servations are in line with the higher risk of trauma for males.

2.2.2. Emergency department typology

There are important differences between EDs within MSF; most receive general emergencies where a wide range of pathologies and patients are treated, while others are specialized centres, such as the paediatric emergency centre in the GRC in Bo, Sierra Leone, or the trauma centres in Kunduz (Afghanistan) and Tabarre (Haiti). The Tabarre centre also treats other surgical emergencies.

Trauma cases were more frequent, as expected, in the trauma centres of Kunduz in Afghanistan and Tabarre in Haiti (100% and 96% respectively). In Martissant (Haiti), 55% of the cases were related to trauma (lots of other admissions were due to the 3-months Chikungunya epidemic). As this is a freestanding unit, most of these cases were finally referred to Tabarre hospital if admission is required (table 1).

2.2.3. Quality indicators

A patient's outcome from the ED can be discharge, admission, referral, death or default (abandonment). The proportions of these outcomes are related to the services provided in the health facility, e.g. freestanding units will have to refer all cases in need of admission, as the referral proportion correlates indirectly with the resources/offered services of the health facility, and directly with the capacity of the surrounding health structures.

Table 1: OCB emergency departments during 2014

Country	Afghanistan		CAR		DRC		Haiti		Pakistan		Sierra Leone	South Sudan
	Kabul	Kunduz	Bangassou	Ouango	Masisi	Martissant	Tabarre	Bajaur	Karachi	Timurgara	GRC-Bo	Gogrial
Project ED												
Total number of cases	56,580	22,180	9,043	2,924	6,053	59,024	9,515	1,230	21,276	21,379	4,648	9,210
Mean cases per month	4,715	1,848	822	418	564	4,919	793	103	1,773	1,782	493	768
Percentage of patients < 5 years	35.4%	8.4%	41.7%	43.4%	44.2%	20.2%	7.5%	30.6%	36.1%	22.3%	89.5%	44.7%
Female percentage	ND	23.3%	ND	ND	48.5%	44.3%	31.3%	ND	ND	46.5%	44.6%	ND
Admission rate	2.5%	11.4%	ND	ND	60.0%	1.1%	31.7%	ND	ND	34.9%	80.4%	24.2%
Referral rate	2.0%	7.3%	29.7%	17.0%	0.0%	4.4%	2.7%	1.4%	2.3%	11.5%	4.1%	0.1%
Defaulter rate	ND	0.9%	0.0%	0.0%	0.0%	0.0%	1.2%	ND	ND	1.1%	0.2%	ND
Percentage of Trauma cases	25.8%	100.0%	10.9%	8.4%	18.9%	55.4%	96.1%	14.0%	17.9%	21.5%	1.5%	8.7%
Mortality rate ^a	0.2%	0.1%	0.2%	0.1%	0.0%	0.1%	0.1%	0.4%	0.0%	2.2%	1.3%	0.2%
Data tool used	MINOS	Individual	Epitools	Epitools	Individual	Individual	Individual	MINOS	MINOS	Individual	Individual	MINOS
Months of data	12	12	11	7	10.7	12	12	12	12	12	9.4	12

CAR: Central African Republic; DRC: Democratic Republic of Congo; ED: Emergency department; GRC: Gondama Referral Centre; ND: No data available

^a Dead on arrival not included

Projects with a high proportion of severe cases (the “high acuity proportion”) are expected to admit more patients.

Outcome results are also used as surrogate markers to assess the validity of the triage systems. For OCB settings, the assumption is that most “red” and “orange” cases will be admitted, die or be referred, while most “green” cases will be discharged. Quality indicators for OCB emergency department activities are closely followed up to better understand the care given – of these, the mortality rate and over- and under-triage rates are analysed in detail (tables 1 and 2).

The mortality rate refers to the proportion of patients who die during their stay in the ED; cases classified as “blue” (dead on arrival) as

per the SATS system are not included in this indicator. The target is a mortality rate < 1%. Only two projects, Timurgara in Pakistan and the GRC in Sierra Leone did not meet this target; reporting a mortality rate of 2.2% and 1.3% respectively. This can be explained in both centres by the high acuity proportion (or proportion of truly urgent cases – red and orange cases as classified by the SATS), which for both represents more than two thirds of the cases seen. For the ED of Timurgara (special setting where MSF is only in charge of red and orange cases), this was 94.3%.

To assess the relevant kind of care given in our EDs (no ordinary OPD activities) within OCB, the target high acuity proportion is > 25%.

Over-triage refers to the proportion of patients who are triaged into a higher acuity level when their true acuity rating is lower, and under-triage refers to the proportion of patients who are triaged into a lower acuity level when their true acuity rating is higher. Both these indicators are also calculated in our projects using the SATS system and can be found in table 2.

2.3. SPECIFIC ACTIVITIES

2.3.1. Data collection

During 2014, ED data was collected through three different tools, which represented a challenge for comparison and follow-up of projects. Six projects used the standardized

Table 2: OCB emergency departments using the SATS system in 2014

Country	Afghanistan		DRC		Haiti		Pakistan	Sierra Leone
	Kabul	Kunduz	Masisi	Martissant	Tabarre	Timurgara	GRC-Bo	
Project ED								
Mean cases per month	4,715	1,848	564	4,919	793	1,782	403	
Percentage of red cases	4.5%	3.9%	18.4%	2.9%	3.5%	21.7%	34.4%	
Percentage of orange cases	17.4%	24.9%	39.4%	15.9%	22.9%	72.5%	35.8%	
Percentage of yellow cases	44.1%	46.9%	28.8%	52.2%	55.3%	2.5%	21.5%	
Percentage of green cases	37.6%	23.8%	13.2%	28.9%	18.4%	1.7%	7.7%	
High acuity proportion	21.9%	28.8%	57.8%	18.8%	26.4%	94.3%	70.3%	
Percentage of over triage	ND	55.7%	20.2%	95.3%	30.6%	45.5%	7.7%	
Percentage of under triage	ND	2.5%	19.3%	1.4%	8.0%	13.2%	80.7%	
ED length of stay in hours (median)	ND	01:10	01:10	02:00	03:45	01:10	ND	
Mortality rate ^a	0.2%	0.1%	0.0%	0.1%	0.1%	2.2%	1.3%	
Data tool used	MINOS	Individual	Individual	Individual	Individual	Individual	Individual	
Months of data	12	12	10.7	12	12	12	9.4	

DRC: Democratic Republic of Congo; ED: Emergency department; GRC: Gondama Referral Centre; ND: No data available

^a Dead on arrival not included

ED individual database, a recommended database for this service, as the use of this tool allows each project to better understand, monitor and evaluate its activities. The other six projects collected ED data in an aggregated way; using the EpiTools or MINOS databases (cf. Health Informatics section).

ED indicators on the use of services and quality of care, together with surveillance of specific epidemiological indicators are be-

ing acknowledged and incorporated in many project logframes; allowing a better monitoring and evaluation of their activities.

2.3.2. Triage

One of the cornerstones of a well-functioning ED is an efficient triage system; in OCB it was decided to implement the SATS in our health facilities. During 2013, to better assess the performance of this system and to assess its

current limitations, a study was designed and conducted in the EDs of projects in Afghanistan, Haiti and Sierra Leone. Immediate results from each studied country were shared with the field during 2014; a more thorough analysis of the whole study is ongoing and will allow a better understanding of the adequacy of this triage system for the different EDs in OCB.

3. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- A thorough analysis of ED activities is essential to improve the level of care offered.
- Constant refresher trainings are necessary as both the high turnover of staff in the field and variability of supervision hampers the continuous improvement of our activities.
- The care provided in new EDs needs to be standardised from the beginning, to avoid subsequent modifications and unnecessary workloads.

PROSPECTS FOR 2015

- Finalizing the SATS study and disseminating the lessons learned.
- Implementing measures to ensure greater standardisation of care in our emergency departments following the “Emergency medicine policy” developed in 2014.
- Expatriate staff working in activities related to emergency care will continue to be briefed and followed up by the emergency medicine referent.

EMERGENCY UNIT

1. OVERVIEW

The emergency unit (E-Unit) oversees the direct management of emergency projects, and supports emergency interventions managed by the operational cells through provision of experienced human resources and/or technical support. In 2014, the E-Unit intervened in 10 countries with direct management, and supported three interventions (in three countries) managed by cells and/or by other sections.

The major intervention in 2014 was the Ebola outbreak intervention in West Africa, which is discussed elsewhere (cf. Ebola Outbreak section). Other important interventions in 2014 were the continued assistance to internally displaced persons (IDP)/refugees/wounded/general population in Syria (including operations both inside and outside the country – Lebanon and Turkey), the assistance to IDP in Juba and the intervention for a cholera outbreak occurring in the same area, and the intervention for civil war in Central African Republic CAR. These are discussed in detail below.

2. PROGRAMME ACTIVITIES

2.1. EMERGENCY ACTIVITIES IN 2014

Over the course of 2014, 13 interventions (direct and support) were performed by the E-Unit (table 1). These included management of disease outbreaks, care for IDP due to conflicts and natural disasters, care for refugees, and care for war-wounded.

2.2. MAJOR EMERGENCY RESPONSE ACTIVITIES IN 2014

2.2.1. Ongoing intervention in Syria/Lebanon/Turkey

Despite the growing restrictions for movement inside and outside the country, the Syrian crisis that started in March 2011 has caused one of the largest population displacements recorded since the Second World War. Almost three million people – with a majority of Syrian, Palestinian and Iraqi families – have refused to live under the ever-escalating violence and have fled the country. The summer of 2014 showed a clear illustration of the endless war-violence: one year after reporting on patients affected by neurological agents in East Goutha, cases suffering from chemical attacks, with symptoms consistent with exposure to chlorine gas, were also reported by MSF-OCB supported hospitals.

Health workers are not immune from the indiscriminate violence directed towards the Syrian population on all sides of the conflict.

Table 1: Emergency activities managed by the E-Unit (direct and support), 2014

Managed by the E-Unit	Reason for intervention	Comments
Lebanon	Connected to Syria conflict: refugees and remote support	Ongoing since 2011
Syria/Turkey	Conflict, IDP, war-wounded, general population needs and remote support from Turkey	Ongoing since 2012
South Sudan	Conflict in SS and intervention for Juba IDP	Started December 2013 up to August 2014
South Sudan	Cholera intervention Juba	Started April 2014 to December 2014
CAR	Conflict: IDP	Started October 2013; handed over to operational cell by end of July 2014
Philippines	Natural catastrophe – Cyclone	Started November 2013 – end of project June 2014
Ukraine	Civil conflict	From October 2014
West Africa: Guinea-Sierra Leone and Liberia	Ebola outbreak	From mid-March 2014 and ongoing in 2015
Support to cell and/or other sections		
DRC	Ebola outbreak	Tech support & HR (Cell and OCBA)
Ukraine	Civil conflict	Tech support & HR (Cell) – hand over to E-pool in October 2014
Brazil	Floods Rio Madera	Exploration done by Brazil office (OCB support) and intervention was done with OCBA support – E-unit OCB tech support and HR.

CAR: Central African Republic; **DRC:** Democratic Republic of Congo; **HR:** human resources; **IDP:** internally displaced persons; **SS:** South Sudan; **OCBA:** MSF Operational Centre Barcelona

Between 2013 and 2014, repeated threats, forced detention, abduction, torture and assassination of medical staff and patients have been registered in healthcare structures, including incidents of violence against international aid volunteers. During this period, MSF teams who were working in Syria also experienced repeated critical incidents and challenges to the provision of direct medical assistance across the country. The on-going

insecurity in northern Syria and spill-over of the conflict into Iraq, with the associated air strikes from the US lead-coalition on the newly renamed Islamic State (IS), gradually forced MSF to withdraw almost all international staff presence inside Syria. In May, the decision was made to suspend all MSF-OCB medical activities in-country, including remote control projects, and to focus on support programs only; a decision that was

accelerated by the abduction of five MSF colleagues that occurred in the Akkrad mountain chain in northern Syria in the beginning of January 2014.

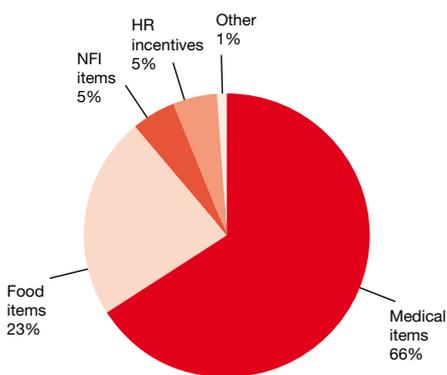
MSF-OCB support activities were shifted towards field hospitals in besieged areas. For some of these areas that were facing extreme depredations of sieges – extending as far as deliberate starvation strategies and blocking of humanitarian goods as a war tactic – MSF-OCB decided to augment the local procurement of drugs inside Syria. For the most affected field hospitals, it was also decided to provide a financial support to facilitate the purchase of medicines and food inside the besieged area.

In 2014, 133 healthcare structures and medical activities benefited from MSF-OCB donations: 60 from Lebanon and 73 from Turkey. Support programmes were also solicited by other actors; mainly other MSF sections. The vast majority of support activities were regular donations toward field hospitals that were located in besieged areas - only 24% of the health facilities were supported occasionally. The number of beneficiaries admitted in the MSF-OCB supported medical health structures was approximately 248,000 per month.

The proportion of war-wounded and deaths related to war trauma, based on data from 12 MSF-OCB supported field hospitals between June and August 2014, is shown in figure 1. Out of total 130,445 cases seen in the supported outpatients clinics, 6,449 (5%) were cases of malnutrition.

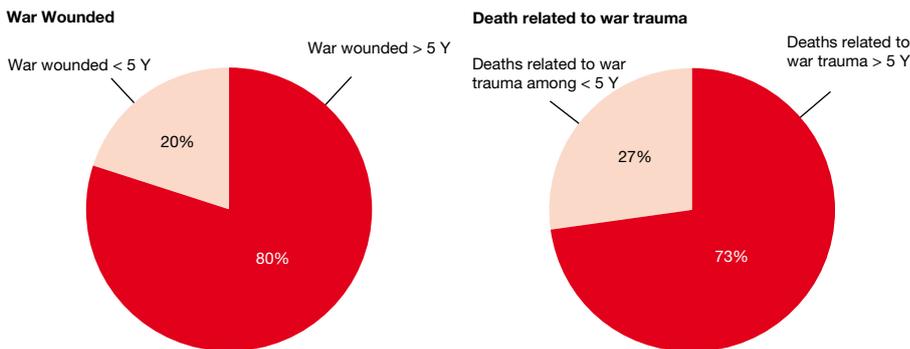
Non-medical support represented 34 % of the total support (Figure 2), the largest part was dedicated to food distribution (11,700 hot meals were distributed every day in besieged areas). Donations given from outside Syria were mainly dedicated to cope with the

Figure 2: MSF-OCB medical and non-medical support inside and outside Syria, in 2014



NFI: Non-food items; HR: Human resources

Figure 1: War wounded and death related to war trauma in 12 MSF-OCB supported field hospitals, Syria



sudden increase of refugees in the Lebanon border region, or to help other aid organizations (including other MSF sections) in case of shortages.

2.2.2. South Sudan: IDP in Juba town – focus on Tongping camp medical intervention

The project started in December 2013 (week 51) directly after the violence erupted in Juba, and were foreseen to continue as long as the IDP were present in the camps or until another actor was able to take over the activities. Tongping had an estimated host population between 21,000 and 27,500; and the three camps in Juba have an estimated population between 12,000 and 15,000 people. MSF-OCB provided the following activities in the Tongping camps were: outpatient consultation (OPD), inpatient care (IPD), immunization, nutritional support, referral, psycho-social support and health promotion. Cumulatively, between week 51 of 2013 and week 33 of 2014, 31,247 outpatient consultations were performed (31% for children under five). The “main morbidities” (Upper [URTI] and Lower Respiratory Tract Infections [LRTI]; confirmed malaria; Acute Watery Diarrhea (AWD) and Skin Diseases) account-

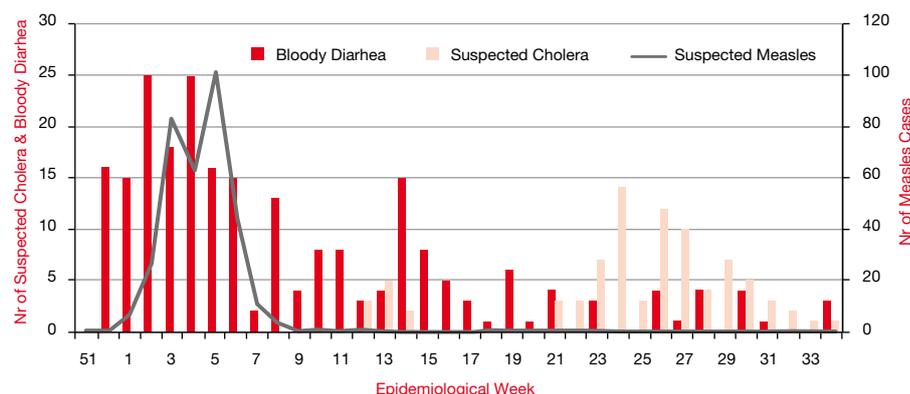
ed for 58% of all consultations at OPD. Additionally, 155 patients were screened for TB, and 22 were confirmed with TB and placed on treatment (referred to the National TB program at Juba Teaching Hospital or Munuki PHCC) – the TB programme was handed over to the National MoH Program in week 32. In the IPD, 732 patients were admitted: 83% of all admissions were children younger than five. Outbreak surveillance data are indicated in figure 3.

Nutritional screening was conducted for a total of 6,456 children younger than five (height 65-110 cm) by mid-upper arm circumference (MUAC). The proportion of Global Acute Malnutrition (GAM) was 6.3% and Sever Acute Malnutrition (SAM) was 1.5%, indicating easy access to food sources. Moderate Acute Malnutrition (MAM) was 4.8%. Temporary peaks in SAM occurred, due to prevailing comorbidity (measles, AWD/cholera and LRTI), and were not linked to food insecurity. A total of 148 children were admitted to Inpatient Therapeutic Feeding Centres (ITFC), which were handed over to Concern in week 34.

2.2.3. South Sudan: cholera intervention

South Sudan experienced a particularly traumatic six months in 2014: political violence

Figure 3: Outbreak surveillance data in MSF OPD, Tongping, South Sudan



caused massive disruption to a fragile country and led to approximately a million people being displaced from their homes. To compound this already difficult situation where tens of thousands of people lived in extremely difficult conditions, an outbreak of cholera threatened vulnerable populations. On 29th April 2014, the first suspected case of cholera in Juba was reported from the MSF-OCB clinic at Juba 3/UN house PoC camp. The cholera outbreak was officially declared on the 15th May in an IDP camp housing around 15,000 persons.

The outbreak touched different communities including both the IDPs and the wider community. The majority of cases were concentrated in Juba. However, there were also cases in Southern Central Equatorial (Yei, Nimule and Kajo Keji). MSF-OCB built and managed a Cholera Treatment Centers (CTC) in Juba 3, the Tongping camps and Gudele. Oral Rehydration Posts (ORPs) were set up in Nyakuran and Muniki.

By the end of July, as the number of cholera cases drastically decreased, MSF decided to close the CTC of Gudele and installed an ORP in the Primary Health Care Centre (PHCC) of Gulei, materials were provided and MOH staff was trained to manage the ORP. In August, the CTC of Juba 3 camp was changed into a daytime ORP and its management was handed over to the Red Cross. The CTC of Tongping camp was turned into a CTU (Cholera Treatment Unit) of four beds. All MSF cholera outbreak-related activities in Juba were finished or handed by the end of August 2014

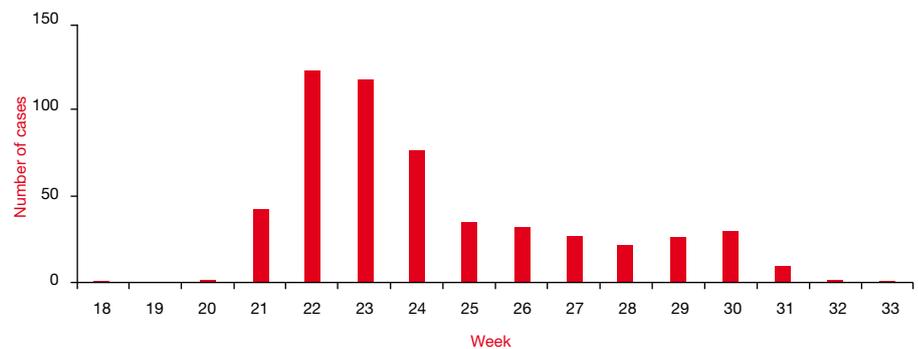
In total, there were 2,249 cholera cases and 46 reported deaths in Juba County between April and October 2014, with a Case Fatality Rate (CFR) of 2.04%. A total of 551 cases were admitted in MSF-OCB health facilities (ORP/CTC - figure 4)- 93.5% of the cases were reported in the CTC/CTUs.

2.2.4. CAR civil conflict intervention – focus on Bangui Mpoko IDP camp 2014

For more than 20 years, CAR has been a theatre of political and military crises, resulting in a dysfunctional healthcare system and mortality rates in some regions up to five times the thresholds of a health emergency.

The new wave of political stabilization started in 2009, followed by waves of violence and a *coup d'état* in 2013, which plunged the country into chaos. The continuing violence began to assume an inter-religious character,

Figure 4: Total cholera cases admitted in MSF-OCB health facilities in Juba County between April and August 2014



and led to mass exodus of the Muslim population from Bangui and other cities to neighbouring countries (Chad, Cameroon, DRC). The total number of IDPs was estimated up to 600,000 persons, with approximately 200,000 in several camps in Bangui. Moreover, up to 600,000 persons were displaced in the bush, and more than 300,000 sought refuge out of the country.

In addition to the intervention in Mpoko IDP camp in Bangui, the E-Unit managed several other interventions:

- An emergency intervention in Bouar, including 1,992 OPD consultations, 16 IPD admissions, 16 war wounded, and NFI distribution for the IDPs.
- An emergency intervention in Yaloké (week 49 of 2013 to week 11 of 2014), including a total of 3,000 OPD consultations.
- Boy Rabe IDP camp in Bangui (December 2013 to March 2014), with a camp population of 20,000 IDPs. Activities included 28,000 OPD consultations, 157 IPD admissions, 200 deliveries, 13850 measles vaccinations, and NFI distribution. The war-wounded cases were stabilized in the camp's clinic and then referred to MSF-OCB hospital.
- Bangassou and Ouango hospitals, South-east CAR: in response to the looting of the medical facilities, MSF supported rehabilitation of the only two hospitals providing secondary health care in this area in Bangassou (March, 2014) and Ouango district (May, 2014). The total target population was estimated at 16,000 and 131,000 for primary health care in the Ouango area and the hospital intervention in Bangassou, respectively. The entire intervention was handed over from the E-unit to the operational cell in July 2014.

Mpoko Camp in Bangui:

By the end of December 2013, Mpoko camp - the largest in the capital - had 100,000

IDPs. The violence continued throughout 2014, leading to arrivals of new IDPs, while some, when the security was guaranteed in their neighbourhood, tried to return home. By June 2014, the official number of IDPs in Mpoko was about 40,000 people and their humanitarian situation remained worrying, with the cessation of food distribution and lack of shelters and mosquito nets. MSF medical staff was treating more than 2,000 malaria cases per week.

Though the number of IDPs had significantly decreased, the number of consultations in the MSF medical structures of Mpoko did not decrease, which was explained by the high number of patients from nearby neighbourhoods seeking healthcare.

The full range of activities included: OPD consultations, Antenatal Care (ANC), nutritional support, dressings, vaccination, Emergency Department (ED), hospitalization (IPD), referral, Health promotion, mortality monitoring, and epidemiologic surveillance. Sexual and Gender Based Violence (SGBV) was common in the context and medical and psychosocial support was offered to these patients. The activities were done in one hospital structure (60 beds) and three health posts for PHC and prevention services. Measles mass vaccination was conducted in January 2014, targeting children below 15 years of age. Afterwards, routine vaccination was implemented and catch-up of measles vaccination was done on a weekly basis through the health post services.

A total of 6,000 to 7,000 consultations/ week were performed in the three health posts. Malaria constituted 33% of all consultations, followed by respiratory tract infections (13%) and diarrheal diseases (5%). A total of 6,194 children aged 0 to 12 months were vaccinated (all antigens), and 1,003 children younger than 15 years of age were vaccinated for measles. 4,323 patients were admitted in the IPD, and an average of 75 patients/ week

were seen in the ED for violent and non-violent related trauma, wounds and burns. Between 131-440 consultations mental health consultations were done per month, and a total of 89 psycho-education and health promotion sessions were conducted.

3. EMERGENCY PREPAREDNESS

No major emergency preparedness interventions were done during 2014. However, there was preparations were conducted for the cell supporting Ukraine.

4. HUMAN RESOURCES AND TRAINING

The E-Unit continued to have three permanent emergency coordinators and three permanent support staff (HR, Logistic/Supply and Finance). Additionally, a task force for Syria, consisting of one dedicated emergency coordinator, one general support position and one medical position, has been embedded in the E-unit since 2012. The Ebola intervention started mid-March 2014 and the

Ebola Task Force was created in August in the E-unit to be able to cover the enormous work needed, without hampering the other interventions in the E-unit.

The number of field emergency coordinators (medical and non-medical) remained at approximately 10-13 throughout the year. Up to December 2014, there were 1,060 departures to the field under E-Unit interventions, with the highest number dedicated to the Ebola intervention (786 international staff).

The coordinators from the E-Unit continued to be part of trainings as facilitators and/or trainers throughout the year, in particular during the Head of Mission and/or Medical Coordinator trainings, PSP training and meetings.

5. COMMUNICATION AND E-UNIT

The E-Unit contributed to specific communication initiatives to increase visibility and leverage. The major communication initiative was done for the Ebola intervention all through the year.

6. NEW DEVELOPMENTS AND INNOVATIONS

Developments in 2014 were mainly done in response to the needs of innovation in the Ebola intervention (cf. Ebola Outbreak section). Some of these included:

- New layout for an Ebola Treatment Centre (ETC).
- Laboratory container with negative pressure and chambers for ETC.
- New items to improve biosafety in the ETC (such as safe needles and waterproof thermometers).
- Distribution of household protection and disinfection kits in order to slow down the Ebola transmission.

7. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

A number of specific lessons were drawn from field interventions:

- Emergency responses continue need to be adapted to the "special contexts" with "out of the box" strategies such as in Ukraine and the Ebola intervention.
- In order to continue to improve security in the field, training and improvement of the tools of the emergency field coordinators is required.

PROSPECTS FOR 2015

- The training/support for Eprep will be continued, in particular in contexts where emergency scenarios may be 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 (PUC) will be continued.
- Further close interactions are foreseen with the Brazil Office in terms of HR (two positions open for Emergency coordinator in Rio) and support to the general overview of emergency assessment.
- The level of 10-15 mobile team members will be maintained throughout 2015.
- The preparation of the E-coordinators on security and risk analysis management will be continued.
- Better mapping possibilities will be evaluated and put in place in emergencies.
- The emergency stock items will continue to be revised/updated.
- The Extranet MSF Supply for the E-Unit will be developed further.

EPIDEMIOLOGY

EPICENTRE

1. OVERVIEW

Results of Epicentre epidemiological studies provide MSF with evidence to improve their interventions and medical care. Results may also be used to support advocacy in the scientific community or with local, national and international authorities. The Epicentre scientific team is composed of epidemiologists, statisticians and laboratory specialists. Two epidemiologists are integrated into the MSF-OCB Medical Department (Operational Research and Disease Control Units) in order to enhance communication and facilitate the implementation of new research projects.

2. PROGRAMME ACTIVITIES

2.1. RESEARCH IN EMERGENCY SETTINGS

In 2014, the support provided by Epicentre epidemiologists to MSF-OCB field interventions mostly focused on the humanitarian crisis in the Central African Republic (CAR) and on the Ebola virus disease (EVD) epidemic in West Africa (Table 1).

In CAR, Epicentre supported the implementation of a surveillance system in the internally displaced populations (IDP) settled in both Mpoko Airport and Boy-Rabe camps. In Bangui, Epicentre also ensured the intersectional compilation of the medical data related to accidental and violent trauma occurring during the period of conflict. In Bangassou, south-east of CAR, Epicentre conducted a survey to assess the baseline health situation several months after MSF-OCB began supporting the regional hospital and surrounding health centers.

Activities to support the Ebola epidemic were numerous. Epicentre epidemiologists joined the pool of field epidemiologists to ensure timely data management, analysis and interpretation of MSF-OCB activities in the Ebola treatment centers (ETC) and in the communities (mainly contact tracing and case investigation) in Guéckédou Préfecture and Macenta in Guinea. In addition, Epicentre epidemiologists were relocated in the Ebola task force to harmonize and centralize the data originating from all MSF Ebola project sites and to provide close support to their field epidemiologists. Based on the combined dataset, an internal epidemiological bulletin was regularly issued, updating all MSF sections on the evolution of the

Table 1: Epicentre/MSF-OCB field interventions in 2014

Country/project	Intervention	Topic
Guinea, Sierra Leone, Liberia	Epidemiological data compilation and analysis for the Ebola task force	Ebola
Guinea	Outbreak investigation	Ebola
Mali, Senegal, Ivory Coast, Guinea Bissau	Surveillance in non-affected countries surrounding the core of the epidemic	Ebola
CAR, Bangui	Surveillance	Mortality
CAR, Bangui	Data compilation on violence (intersectional)	Violence
CAR, Bangassou	Survey	Mortality, vaccination, nutrition

epidemic and providing a description of the epidemic over time, place (ETCs/countries) and patients' characteristics. These data allowed crucial resources to be adapted, and guided the scale up of MSF field interventions and outbreak control strategies. The analysis of patient outcomes (survival/case fatality rate) according to potential predictors (e.g. age, sex, time to admission, viral load etc.) also allowed a better understanding of EVD and helped to guide the development of research studies that will hopefully help improve EVD preventive and therapeutic interventions. Finally, through intersectional collaboration, Epicentre has recorded the progress made towards Ebola preparedness in countries surrounding the core of the epidemic. Short internal reports have been circulated about Mali, Guinea Bissau and Ivory Coast. An interactive map of alerts and suspected cases is currently under preparation.

2.2. SUMMARY OF OTHER RESEARCH CONDUCTED IN 2014

The key research areas in Epicentre include vaccine preventable diseases, diarrhoeal diseases, mental health, surgery, diagnostics,

antibiotic resistance, nutrition, HIV/AIDS, tuberculosis, malaria and neglected diseases, including the EVD. During 2014, MSF-OCB collaborated in a number of these research activities.

2.2.1. Ebola viral disease

An Epicentre representative was part of the MSF Ebola Trial Advisory Group. This group provided technical advice to facilitate the implementation of intervention studies evaluating the efficacy of investigational products in selected MSF's ETCs. In this line, Epicentre provided technical support on request, notably on the writing of a protocol for MEURI (Monitored Emergency Use of Unregistered and Experimental Drugs).

In 2014, Epicentre started to co-manage the MSF Ebola Trial Management Group for Vaccine, aimed at accelerating the development, evaluation and production of vaccines against EVD. In collaboration with the World Health Organization, the Health Ministry of Guinea and other partners, MSF-OCB and Epicentre are working together to launch a Phase III trial in Guinea to test the VSV-EB-OV¹ vaccine for safety, efficacy and effectiveness to prevent EVD. This study involves two

components: vaccination of frontline workers and vaccination of contacts of EVD patients using a ring vaccination. Although there are other trials planned in Liberia and Sierra Leone, the OCB-Epicentre trial is the only trial promising to provide essential information about vaccine use.

2.2.2. Vaccine preventable diseases

The survey on the prevalence of nasopharyngeal carriage of *S.pneumoniae* implemented in Sheema District (Uganda) was completed in March 2014. The global carriage prevalence was 39%, decreasing from about 70% among children younger than 5 years, 35% among children aged 5-14 years and less than 5% among older participants. These data are due to be published in 2015 and will allow the effectiveness of PCV (pneumococcal conjugate vaccine) introduction in this East-African region to be monitored, together with guiding vaccination strategies.

In Juba (South Sudan), Epicentre assessed the short term vaccine effectiveness of the killed² whole-cell oral cholera vaccine (Shanchol) in adults and children living in the IDP's camps where cholera vaccination campaigns were implemented as part of the response to the 2014 cholera outbreak. Preliminary results showed that total vaccine protection was high, supporting the findings from previous studies. The vaccine protective effect was however higher in adults than in children. So far, the effectiveness of this vaccine under field conditions has been poorly documented and these results will therefore provide critical guidance for scaling up the use of the vaccine.

Epicentre and OCB, supported by the MSF Innovation Fund, are also planning to implement a study in 2015 to examine the heat stability of measles vaccine. If measles vaccine could be used effectively in a controlled temperature chain (i.e. at ambient temperatures, rather than the normal cold chain temperature), some of the current logistical constraints could be overcome and vulnerable populations better reached.

The MSF Innovation Fund is also supporting Epicentre in examining the possibility of using a needle-free injection device during a measles vaccination campaign. Specific sites and

details of this demonstration project have yet to be determined, but the project is expected to provide information on the advantages and acceptance of the use of a needle-free injection device in mass campaigns.

2.2.3. HIV

In 2014, Epicentre released the final report on the HIV population survey conducted in Mbongolwane and Eshowe (KwaZulu-Natal, South Africa). The study showed a high (25%) HIV prevalence in the area. The overall incidence was moderate (1.2 new cases/100 person-year), but with a high number of new infections occurring in young women (2.9/100 person year). Access to HIV testing and ART was relatively high in the area (81% of the participants having been tested for HIV prior to the study) and ART coverage among those in need of ART was 75%. However, young people seem to have more difficulties accessing HIV testing and treatment. Strategies to test, link and treat young people should be developed as well as innovative interventions for HIV prevention in young women. The study is helping MSF to orientate its operational strategies in this area.

In addition, Epicentre issued reports and communicated its findings from multi-centric analyses on pre-ART care among adults treated in MSF HIV programs, and on cohorts of adolescent patients before and after starting ART treatment (description, mortality, treatment outcomes, program retention). The databases used for the study were gathered from various MSF African and Asian HIV/AIDS projects, including those from MSF-OCB.

Epicentre joined the CIPHER³ Paediatric HIV cohort collaboration, a major initiative devoted to accelerating research in paediatric HIV. Epicentre will contribute to the project by providing data from the MSF paediatric HIV cohorts (including data from MSF-OCB). The priority research questions will focus on global epidemiology of adolescents with perinatal HIV infection and on the duration of effective first-line antiretroviral therapy in children. Data will be shared by Epicentre in 2015, as soon as ethics clearance is obtained from each country where OCB has a HIV pediatric program.

In 2014, Epicentre developed a study protocol for the intersectional UNITAID project that will oversee the introduction of a new Hepatitis C virus treatment for HIV patients in six different countries. The OCB fields that are involved are located in Kenya (Kibera), India (Mumbai), and Ukraine. Epicentre will support the development and management of the multi-centric cohort database. In addition, in Kibera, the project will include the validation of new point of care serologic and virologic Hepatitis C tests.

Supported by Epicentre, the MSF intersectional study that began in 2011 to evaluate the performance of new and currently used rapid diagnostic tests for HIV in five African countries was completed in all six study sites. Final results are expected in 2015. One MSF-OCB site (Conakry, Guinea) was included in this multi-centric study.

2.2.4. Malaria

The report of the study evaluating the time taken for three malaria rapid diagnostic tests (RDT) to become negative after successful treatment in children under five in Uganda was finalized. The results will be published soon and will guide the choice of RDT and fever algorithms appropriate to specific epidemiological settings.

In Maradi (Niger), a study assessing the efficacy of three artemisinin-based combinations⁴ for the treatment of uncomplicated malaria in children under five years of age completed the recruitment of 663 children (221 per treatment arm) in December 2014. Data cleaning and analysis are ongoing.

The study evaluating the efficacy and bio-availability of Artemether-Lumefantrine in severely malnourished children compared to non-severely malnourished children (collaboration with the Malaria Research and Training Centre in Bamako and the Epicentre Research centre in Maradi, Niger) has completed patient recruitment. A total of 360 children in Mali and 39 children in Niger were recruited. This is not the planned sample size of 540). However, the study Data and Safety Monitoring Board, with the support of an intermediate analysis, concluded that the sample obtained so far was sufficient to provide definitive response to the study objectives. Data cleaning and final analysis are ongoing.

¹ Developed by the Public Health Agency of Canada.

² Bivalent (O1 and O139).

³ Collaborative Initiative for Paediatric HIV Education and Research.

⁴ Artesunate-amodiaquine, dihydroartemisinin-piperazine and artemether-lumefantrine combination therapies.

In 2013, Epicentre began supporting MSF-OCB in evaluating seasonal malaria chemoprevention (SMC) in children in Niger. In 2014, a survey was carried out at the end of the malaria season in the four health areas where SMC was implemented. Estimation of SMC coverage was high with 92% of the targeted children receiving at least three of the four treatment regimens.

Finally, Epicentre provided support for the publication of the results from a cross-sectional population-based malaria survey conducted in Preah Vihear province, Cambodia.

2.2.5. Tuberculosis

In the absence of randomized controlled trials (RCTs) to assess new treatments for (multi/poly) drug-resistant (DR) tuberculosis (TB), retrospective cohort analyses could provide important information on how to improve the management of these patients. In 2014, Epicentre conducted a multi-centric analysis on cohorts of MSF patients with (multi/poly) drug-resistant tuberculosis. A first report was released focusing on poly-DRTB, DRTB in

both children and HIV co-infected patients (characteristics, tolerability, time to culture conversion, outcomes, treatment defaulting and their respective predictors) as well as on the revised WHO outcome definitions. Further analyses are planned for 2015.

2.2.6. Niger Research Centre

In 2014, MSF-OCB continued to support the Epicentre research base in Niger. Over the year, the results from several studies were communicated including: (I) a prospective intervention study comparing seven strategies to prevent acute malnutrition among young children in crises (Langendorf *et al*, *PLoS Med* 2014); (II) a descriptive study on the diversity and antimicrobial resistance of enteric bacterial pathogens in children with diarrhea (Langendorf *et al*, *Accepted in PLoS One*); and (III) a double-blind RCT on the systematic use of amoxicillin in children with uncomplicated severe acute malnutrition. Other studies in progress included a challenging phase III RCT on the use of a new heat-stable rotavirus vaccine.

3. TRAINING

During 2014, Epicentre ran two PSP (Populations in precarious situations) courses and two REPEPI (Responding to epidemics) courses. These were attended by staff from all MSF sections including MSF-OCB. In addition, Epicentre developed a one day training module on epidemiological surveillance and monitoring of EVD. The training material will be made publicly available and freely online.

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 section 2.2 and 2.1.

The FUCHIA helpdesk continued to provide regular technical support to all projects where a FUCHIA monitoring system was implemented.

5. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

For Epicentre, as for the entire MSF movement, 2014 was dominated by the West African Ebola epidemic. Globally, Epicentre met the challenge of putting efforts in the EVD outbreak related activities without jeopardizing other ongoing projects. However, while these activities stimulated the scientific interest of all Epicentre staff, they also significantly challenged Epicentre functioning and raised internal debates. Lessons learned will feed fruitful reflection and recommendations for the future.

PROSPECTS FOR 2015

The main scientific challenge for 2015 will be to ensure the launch and achievement of the RCT to assess the efficacy and effectiveness of the EVD vaccines in Guinea. Efforts will be made to ensure that all necessary resources are allocated for this objective while ensuring the quality of other ongoing projects. Epicentre will also continue to ensure the dissemination of recent study results to the MSF-OCB Medical and Operations Departments, and to discuss new research ideas with OCB. Finally, Epicentre will continue to work on improving its interaction, communication and collaboration with MSF-OCB partners both in the field and at headquarters. In particular, an Epicentre epidemiologist will be located to Cape Town in 2015 to help strengthen collaboration between Epicentre and the South African Medical Unit (SAMU) linked to MSF-OCB.

EVALUATION UNIT

1. OVERVIEW

This year marks the end of the five-year Evaluation Project which has now been operationalised under the oversight of OCB operations and MSF Sweden. The Stockholm Evaluation Unit (SEU) has continued with its aim to manage credible evaluations and reviews on behalf of OCB and other operational centres. Over the course of the year more than twelve dossiers were followed and completed, and outcomes were made available throughout the movement and beyond.

2. PROGRAMME ACTIVITIES

Over the course of 2014 the SEU worked on ten evaluations within OCB. Two project evaluations were carried over from 2013 and three were started and not yet concluded. Three evaluations were started and completed during the year, including two evaluations of transversal HQ projects. Finally, two evaluations were started but subsequently cancelled due to change in context and duplication with the international office evaluations (Table 1, Annex).

The use of evaluations has been a central focus for the evaluation unit and OCB board over the course of the year. By working on the overall quality of the evaluations as well as limiting and focusing the number of recommendations, we hope to have made evaluations more useful to the movement. This is currently being measured through systematic follow-up over a 36 month period following the evaluation completion. As such, we hope

to reconceptualise the evaluation report as the end of one process and the start of another.

3. INNOVATIONS AND COLLABORATIONS

The SEU continued to work closely with other evaluation entities in the movement through the International Evaluation Group (IEG) and the 4th Intersectional Evaluation Day in Brussels. The unit has also been exploring collaborations with a number of external bodies including ALNAP, Pamoja, the London School for Hygiene and Tropical Medicine (LSHTM), the International Initiative for Impact Evaluation (3IE), as well as working closely with partner sections and external consultants.

The SEU has also taken the lead on the creation of the website www.evaluation.msf.org, which will internally centralise evaluations in MSF, as well as become the first public evaluation portal. The website, which is integrat-

ed into the International MSF standard, will not only involve sharing of reports, but also sharing of the evaluation experience and setting the scene for a common language and a shared understanding of what evaluation means to MSF.

4. HUMAN RESOURCES AND TRAINING

- The SEU continued to invest in strengthening MSF evaluation capacity through the intersectional training held in Vienna. The training targets staff from both operational management and technical support departments within the movement.
- Members of the SEU also took part in two trainings, including one MSF training in Project Management, and an external training on Results in Advocacy held by Pamoja.

5. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- High profile evaluations (such as Ebola) have taken a very long time to launch due to the ongoing operational needs and priorities. In evaluation, timing is an important factor and these experiences underline the need for early planning and preparation.
- In the broadest terms the workflow of evaluations is liable to represent a bottleneck and introduce delays when the organisation is facing major emergencies, such as those experienced with Ebola and other emergencies during the past year.
- The perceived quality and usefulness of evaluations improved, in line with a greater acceptance of evaluations in OCB Operations. There is improved utilisation of evaluation outcomes as shown by the evidence produced through evaluation follow-up.
- On that note, evaluations related to HQ processes have proved to be more successful during the evaluation follow-up, with a tendency still for the field to not provide responses to evaluation outcomes. This needs to be improved in 2015 and beyond.

PROSPECTS FOR 2015

Many of the 2014 prospects remain valid and underline the need for continued work in the following areas:

- Improve field involvement in definition of evaluation purpose and scope by encouraging active participation in identifying the need for evaluation, as well as developing Terms of Reference.
- Continue to develop the 'mixed team approach' which brings together and capitalises on the skills and experience of internal and external resources.
- Precipitate the evaluation follow-up and fully integrate it into the operational monitoring system.

HEALTH INFORMATICS

1. OVERVIEW

Within OCB, there are two main data collection tools used for standardised monitoring and reporting of medical programme data: a) the Epicentre tools for outpatient and inpatient departments and gynaecology/obstetrics services (OPD/IPD/Gynobs tools) and b) the Medical Information Network for Operational support (MINOS). MINOS is an information system, designed and developed in-house, for the collection, storage, transmission, analysis, and reporting of medical service data.

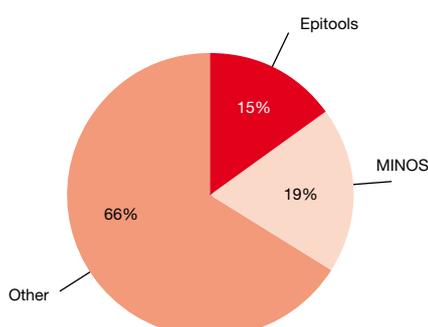
In addition to the Epicentre tools and MINOS, customised databases tended to be used for the collection and reporting of data in vertical projects (e.g. vertical HIV projects), for more specialised activities (e.g. sexual violence, neonatology) and in emergency projects. However, the Epicentre tools were still adopted in some emergency interventions in 2014 (such as the Central Africa Republic [CAR]).

The Epicentre tools were used in 5 out of the 29 missions where OCB was working, while MINOS was used in eight. In some countries, Epitools and MINOS were used in parallel in the same mission and in the same projects, such as in Sierra Leone where MINOS was used in the OPD of the health centre while Epitools were used in the Gondama Referral Centre (GRC). In DRC, a similar setup of both MINOS and Epitools was used in Masisi.

2. OCB ROUTINE DATA TOOLS

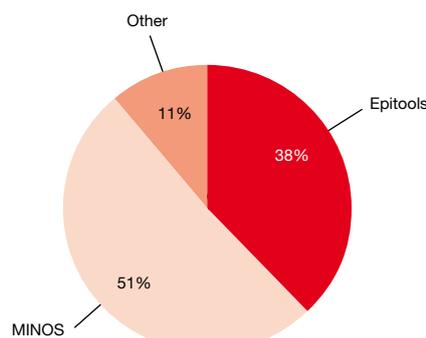
At the end of 2014, fifteen OCB projects were using MINOS as a primary data reporting tool (Afghanistan – Ahmad Shah Baba, Kunduz, Khost; DRC – Masisi; Egypt – Abu Elian; India – Bhadrachalam; Pakistan – Timurgara, Karachi, Bajaur; Sierra Leone – Bo; South Sudan – Gogrial, Doro, Pibor, Bor; Mauritania – BSK), and seven across five missions were using the Epicentre tools. The projects using neither tended to be those projects that require individual level data, e.g. HIV/AIDS, TB, mental health, etc.; or a number of the emergency projects (Ebola, Lebanon, several projects in CAR). The distribution of data tools in use throughout the year is provided in Figure 1.

Figure 1: Main data tools per OCB project, 2013 (n=78)



Among the 1,454,596 general OPD consultations (disregarding ante- and postnatal care (ANC/PNC) and family planning consultations), 38% were reported through the Epicentre tools and 733,774 (51%) through MINOS (Figure 2); among the 56,069 general IPD admissions, disregarding admissions to inpatient therapeutic feeding centres (ITFC) and maternity admissions, 52% were reported through the Epicentre tools and 19,138 (34%) through MINOS (Figure 3). These figures reflect the relative expansion/roll-out of MINOS (cf. §2.2.): in 2013, 31% of the OPD consultations and 18% of the IPD admissions were reported through MINOS.

Figure 2: OCB data reporting tool for OPD consultations, 2013 (n=1,346,649)



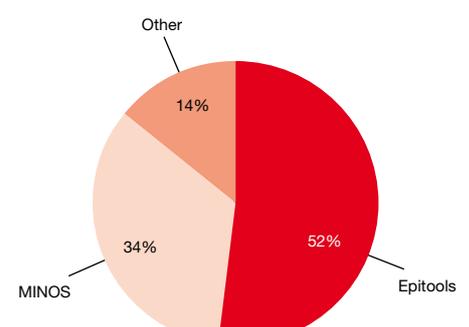
2.1. EPICENTRE TOOLS

During 2014, 5 out of the 14 missions that were supposed to have implemented the Epicentre tools were using them. The sum-up tool that was generated in 2013 in order to aggregate data across different Epicentre tools was used in DRC, Niger and Kenya.

2.2. MINOS

MINOS handles aggregated data of most standard MSF services. For these services, MINOS produces and displays the standard project monitoring and epidemiologic surveillance indicators. These indicators show the use of MSF medical services by the beneficiaries, the quality of those services, and the

Figure 3: OCB data reporting tool for IPD admissions, 2013 (n=61,471)



trends of the occurrence of diseases of operational interest.

2.2.1. Implementation

At the beginning of 2014, MINOS was being used in nine projects across four missions (Afghanistan, Egypt, Pakistan, and South Sudan). By the end of 2014 this had increased to fourteen projects across eight missions (DRC, India, Mauritania, and Sierra Leone began using MINOS; however, the project in Sierra Leone which made use of MINOS also closed in 2014 in response to the Ebola outbreak.

2.2.2. New developments

During 2014, MINOS continued progress towards replacing the Epicentre tools as the standard tool for collecting, reporting and analysing aggregate data on OCB medical activities. In 2014 the final system features, needed to fully replace Epicentre tools, were developed, including multi-indicator reports, data validation, and standard reports for OPD, IPD, ANC, PNC, and Maternity service types.

At the close of 2014 MINOS was transitioning from the implementation stage of its project lifecycle into an institutionalized service.

As a service MINOS will undergo continuous improvement, and responsibility for day to day management of the system will gradually be passed from the Medical Department to Operations.

2.3. OTHER DATA TOOLS

Dedicated databases for the monitoring of specific activities/programme components (HIV/TB, mental health, surgery, etc.) are discussed in the relevant sections. Overall, standardised databases providing individual level data were available for the emergency department, intensive care unit, operating department, mental health, sexual violence, obstetrics, and neonatology. The trend for linking such individual-level databases to the aggregated data entry required for MINOS continued: specific modules allowing rapid generation of MINOS input were developed for the obstetrics, neonatology, and emergency department databases.

New data systems included a module for automatic calculation of sexual violence indicators for the sexual violence database, and a customised database for the monitoring of the integrated mental health/sexual violence/victims of torture project in Cairo, Egypt. An expansion of this database for similar pro-

jects in Athens, Greece and Rome, Italy is foreseen for 2015. Additionally, an integrated hospital database, allowing tracking of patients throughout their hospital stay and facilitating both patient management and indicator reporting, was developed for use in the trauma centres of Tabarre (Haiti) and Kunduz (Afghanistan) – this was set to be implemented from the beginning of 2015, and should pave the way for electronic patient files for hospital projects in general.

2.4. TYPOLOGY

The Typology is an initiative by the MSF International Office, designed to collect a set of intersectionally-agreed volume indicators, aggregated per year. In OCB, the typology data collection process is integrated into the annual collection of all programme indicators, in order to avoid burdening the field with multiple parallel requests – data is typically extracted at HQ from the Epitools/MINOS or from the other customised data tools in place. Delays in the release of the Typology request by the international office led to subsequent delays in compiling the annual data overview and indicators-suggesting this process needs streamlining.

3. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- While there is still scope to improve the quality of data collected in OCB projects and the timeliness of data reporting, the mind-set towards data collection at a field level is much more positive and pro-active than ever before.
- The improved functionality within MINOS increases its ability to meet project and mission specific analysis and reporting needs. However, each new feature requires initial configuration for each project and continued maintenance at the project level. It became clear over the course of 2014 that meeting these needs for the increasing number of projects using MINOS required permanent, dedicated human resources specialized in supporting MINOS. Additionally, it became evident that initial project level customization is best carried out in the field with face-to-face interaction. This underscored the need to have a mobile implementing officer (MIO) specialized in working in the projects to optimize the new MINOS features.
- Challenges in obtaining annual data (in particular following the delays introduced by the International Office) underscore the importance of regular data monitoring across all projects, rather than only once a year during the typology exercise.
- The presence of a long-term national staff member tasked with managing data and distributing information leads to quicker identification and resolution of data and report related problems and greatly reduces knowledge loss and retraining required due to project and coordination turnover.

PROSPECTS FOR 2015

- In response to a growing consensus that OCB should implement better tools for electronically managing and analysing disaggregated (patient level) data, at least one project will be launched in 2015 to better understand the exact needs and to find and implement applications to meet the identified needs.

- We will increase our efforts to more broadly educate those with managerial and decision making responsibilities about the accessibility and utility of information on our operational medical activities made possible by the various tools in use.
- The integrated hospital database will be implemented in the two trauma centres of MSF-OCB, and the experience will serve to develop relevant and easy-to-obtain indicators for hospital management. This will be an ongoing process in 2015.
- We will continue to provide the necessary support to those missions where MINOS is not available or where the opportunity to implement MINOS might be limited (e.g. during an emergency intervention). In this vein, there will be a continued emphasis on ensuring that staff are adequately briefed on data management issues before going to the field, together with providing training in the field as required.
- Efforts to improve the quality of our data will continue to be a major focus in 2015. Fundamental to this is ensuring that good links are established and maintained between the medical department, the cell and staff in the field, and that there is a mutual appreciation of the importance of data collection and reporting.

HEALTH PROMOTION AND SOCIO-ANTHROPOLOGY

1. OVERVIEW

In 2014, most of the Health Promotion (HP) support was dedicated to HP activities related to the Ebola outbreak in West Africa. This emergency generated a significant increase in the provision of HP support, together with a greater overall interest in anthropological support. As a consequence, HP support to regular projects was sometimes compromised.

Another consequence of the Ebola outbreak has been the increased contact and networking with other actors. Most of these have had no previous experience of delivering HP activities during a viral haemorrhagic fever (VHF) outbreak, unlike MSF OCB which has developed experience in this field over the course of many years.

2014 also saw stronger collaboration between the HP unit and other departments (such as the Communications department) and with other MSF sections. In July 2014, OCBA opened a position for an HP and Anthropology advisor, making it the second section to dedicate a full time position to support this field.

2. PROGRAMME ACTIVITIES

2.1. HEALTH PROMOTION GENERAL OVERVIEW

In 2014, HP activities were conducted in 43 projects across 22 missions (not including vertical HIV/TB projects, which are reported elsewhere – (cf. HIV/TB section). These projects included emergency interventions (15 projects; Table 1, Annex) and regular projects (28 projects; Table 2, Annex).

Table 3a+b: Example HP activities in Monrovia, Liberia in 2014

- A total of 175,549 households were visited by the Community Health Volunteers from August to October 2014 for door-to-door awareness on Ebola.

	Households	Male	Female	Children	Total People reached
Total (n)	175,549	318,376	359,859	394,086	1,192,376

- Between September and October 2014, HP activities were conducted during the distribution of Ebola protection kits in Monrovia.

	Participants	Live demonstrations	Mass projections
Total (n)	10,527	52	37

- Training of trainers on how to conduct Ebola HP activities took place from October 2014 to January 2015
 1. Number of Community based organization trainings conducted: 48 with 725 participants
 2. Number of Ebola District task forces trainings conducted: 6 with 263 participants
- Community dialogues were conducted by community health promoters on Ebola from December 2014 to January 2015
 1. Number of dialogues conducted: 91
 2. Number of participants: 258 participants.

2.2. HEALTH PROMOTION ACTIVITIES AT A PROJECT LEVEL – EXAMPLE

We present one example of HP activities in the Ebola emergency project in Monrovia, Liberia in which HP activities were extremely important and formed a core component of the intervention (Table 3a+b).

3. TRAINING AND HUMAN RESOURCES

Trainings which included a HP or socio-anthropology component were as follows:

- Water and Sanitation (WatSan) week in emergencies: module “Health promotion in WatSan and emergency”.
- Sexual and Reproductive Health training: module “Health promotion and reproductive health”.
- Management of Health Services (MHS): module on “Health Promotion and Anthropology in OCB” & case study integrated with malaria and health structure models components).
- Health Promotion level I training in Brussels: ten day training, open to all sections (the training curriculum for this course was revised to include additional HP modules. As such, the HP level II training session was no longer offered in 2013.
- Health Promotion training in Kabul: five days of regional training open to all sections and neighbouring countries.
- Two days Ebola training in Brussels: a module on HP & Ebola were conducted between August and December 2014.
- One day HP and Ebola training was developed on line.

4. RESEARCH AND DEVELOPMENTS

To generate a better understanding of the socio-cultural issues in the contexts in which OCB works, and to better support OCB medical activities, a number of qualitative socio-anthropological surveys were routinely conducted in 2014 as part of HP activities or for operational research purposes. These included the following:

- Afghanistan - Kabul: "They eat it like sweets" a qualitative study on perceptions of antibiotics and antibiotic-use of patients, prescribers and pharmacists in a district hospital.
- Afghanistan - Kabul: quantitative study on perception, knowledge and use of antibiotics in a district hospital.
- Cambodia - Preah Vihear: quantitative research on populations' knowledge of malaria and village malaria workers.
- Cambodia - Preah Vihear: qualitative research on "Perceptions about the prevalence survey conducted by MSF".
- Cambodia - Preah Vihear: qualitative research on "Pre-perceptions about Targeted Malaria Elimination".
- South Sudan - Maban county: anthropological study on "Coping with unsteadiness: getting health care in Doro refugee camp"
- South Sudan - Maban county: quantitative door-to-door survey on "People's knowledge of Hepatitis E and hygiene after massive health promotion activities in Doro refugee camp".
- South Sudan - Maban county: a quantitative door-to-door survey on "Mosquito net coverage in Doro refugee camp".
- Egypt - Abu Elian: lessons learned from the HP component in the Abu Elian project (conducted in the closing phase of the project).
- Italy, Chagas project: final report on "Information on the operational approach that MSF used and the outcomes achieved".
- Central African Republic - Bangassou: report on local population analysis and their health seeking behavior.
- Liberia - Monrovia: "If they bring it, we will take it" community perceptions of clinical trials for Ebola.
- Liberia - Monrovia: "One man can become an atomic bomb for the whole nation", perceptions of the Elwa 3 Ebola treatment Unit and the stigma of survivors.
- Liberia - Monrovia: "The Breakdown" report on community perceptions and practices during the Ebola epidemic.
- West Africa: "Capitalization and evaluation of the HP response during the Ebola outbreak in West Africa".

5. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- Lessons learned from the multidisciplinary approach to the Ebola outbreak still need to be discussed, although the central role played by health promotion as one of the main pillars of the intervention is more than clear.
- Globally we improved in terms of documenting and capitalizing on lessons learnt from our experiences in the field, but there it still room for improvement. The question of monitoring our activities also continues to be raised. Standard HP indicators do exist but are not used everywhere. There are also questions around how the data that are collected are used: Are they gathered in the form of a data base? Are they used for analysis? Unfortunately the answer to both these questions is often no.

PROSPECTS FOR 2015

- As a result of the strong interest in community based approaches, a new position of "Community Focal Point" has been created in the Operational department. Close collaboration will be developed with this person to develop a common understanding and improve the HP component in this field.
- Another consequence of the strong interest in anthropology is the opening of a new position of Mobile Implementation Officer (MIO) for qualitative studies. This position would serve as a transversal support for the medical department. Here as well, we will work closely in order to improve our health promotion activities.
- Efforts will continue to be made to create more links with the Communications department for the development of HP tools such as short animations, movies, etc.
- One objective from last year which was not achieved, and is rescheduled for this year, is the revision of the Health Promotion Policy of MSF-OCB, and at the intersectional level. The plan is to standardise HP terminology and summarize these in a concept paper document.

HIV/AIDS AND TUBERCULOSIS

1. OVERVIEW

2014 saw all countries adapting and implementing the 2013 WHO guidelines on HIV/AIDS. This included increasing the antiretroviral therapy (ART) initiation threshold to CD4 < 500 cells/ µl, initiation of ART in all children under five and all pregnant and breastfeeding women, regardless of level of immune suppression, and the implementation of viral load monitoring. Almost all countries fully adopted these guidelines but implementation has been phased. Retaining pregnant and breast feeding women in care has already been highlighted as one of the most significant challenges, along with the realities of scaling up viral load monitoring, with MSF demonstrating that the “test is not enough”. The sustainability of ongoing scale up has again been challenged with significant reductions in PEPFAR (President’s Emergency Plan for AIDS Relief) funding and realignments within the Global Fund towards the requirement to show greater capacity for domestic funding.

OCB has continued to invest in its large vertical programmes but the focus has been on increasing quality of care, with the aim of “blocking the leaks” in the HIV care and treatment cascade. Areas that have received particular focus have included the scale up of viral load monitoring, PMTCT (prevention of mother to child transmission) counselling strategies and demonstration of alternative refill models as a means to improve retention in care and support further ART scale up.

Implementation of the WHO 2013 guidelines saw an increase in new patients initiated on ART in OCB projects in 2014, although the majority of projects (13 out of 18) have adopted a “light approach” supporting ministry of health sites with their own staff and drug supplies. The aim is to improve quality of care and demonstrate innovative programmatic strategies.

The ongoing crisis in the Central Africa Republic and the high prevalence of advanced HIV seen by our field teams among inpatients has set the agenda for setting up HIV/TB services. Besides this, there has been little other integration of HIV/TB activities outside of the main HIV programmes. In part this reflects the geographical and disease focused OCB project portfolio and also the emergency interventions required in South Sudan and Sierra Leone .

2. PROGRAMME ACTIVITIES

2.1. INTRODUCTION

2.1.1. HIV

At the end of 2014, OCB was supporting HIV care and treatment in 18 projects across 10 countries. Of these, 15 were vertical HIV/TB projects in the following eight countries: India (Mumbai), Guinea (Conakry), Democratic Republic of Congo (Kinshasa), Mozambique (Mavalane and Changara), Zimbabwe (Buhera, Gutu, Chikomba, Nyanga), Malawi (Thyolo, Nsanje and prison project), South Africa (Khayelitsha, KwaZulu-Natal), and Ukraine (Donetsk). In the three remaining projects, HIV/TB activities were integrated with other medical activities such as primary care, chronic disease management and sex-

ual and reproductive health (SRH) in Kenya (Kibera), Lesotho (Roma) and the Democratic Republic of Congo, DRC (Masisi). Five projects in India, DRC, Kenya, Guinea and Ukraine remain primarily MSF supported in terms of human resources and/or drug supply whilst the remaining projects aim to work in collaboration with ministry of health staff to strengthen and increase the quality of HIV services.

2.1.2. TB

TB-related activities continued in 13 TB or HIV/TB vertical projects in India, Guinea, Ukraine, Mozambique, South Africa, Lesotho, Malawi, Zimbabwe and Kenya. In the projects where there is a high burden of drug-resistant TB (DR-TB), the focus was on improving DR-TB case finding and diagnosis.

2.2. TESTING FOR HIV AND TB

2.2.1. HIV Testing

In 2014, HIV testing was supported by MSF OCB in thirteen projects. Across these projects 94,423 HIV tests were performed, 63% of which were performed in the community (Figure 1). In most OCB projects, facility-based HIV testing is now being implemented by the respective Ministries of Health and MSF has continued to support community based testing strategies. In KwaZulu-Natal and Lesotho, door-to-door and mobile testing strategies were ongoing; in Gutu, Zimbabwe, night-time testing strategies were implemented to target men and commercial sex workers; in Mozambique, HIV testing via members of community ART groups (CAGs) has continued.

Figure 1: HIV testing supported by MSF in OCB projects, 2007-2014

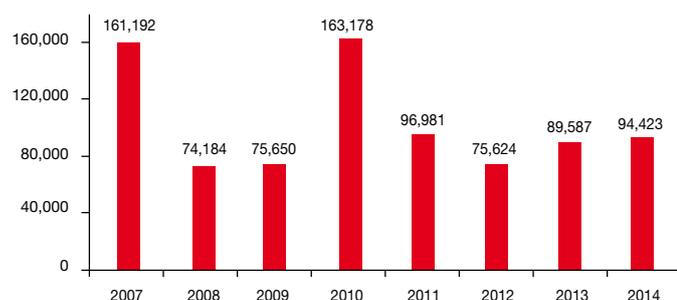


Figure 2: Number of newly registered HIV patients in OCB programmes by year of entry, 2005-2014

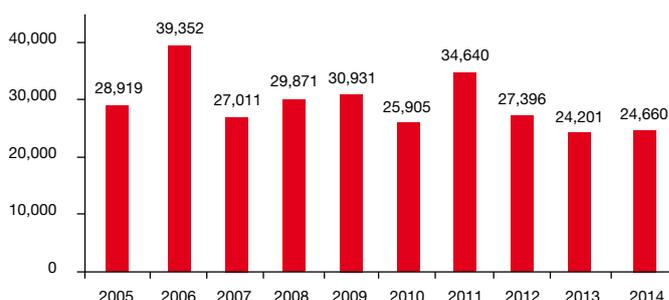


Figure 3: ART initiations (adults and children) in OCB projects, 2005-2014

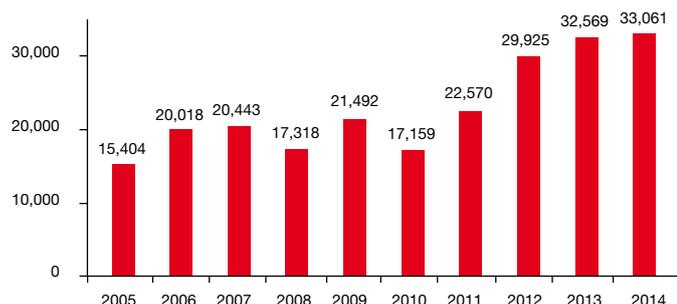
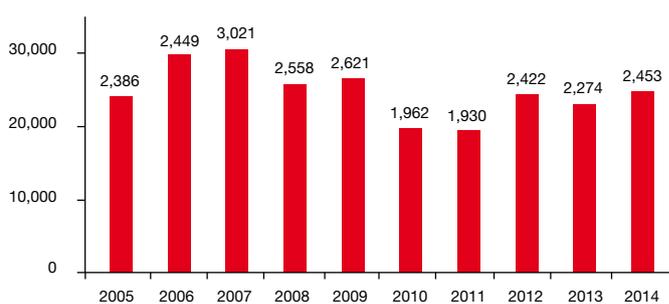


Figure 4: Paediatric ART initiations in OCB projects, 2005-2014



Gaps identified in testing include poorly implemented provider initiated counselling and testing PITC within in-patient and outpatient department (OPD) clinics and inadequate index case testing (testing the family of an identified HIV positive patient) particularly related to the testing of children and adolescents.

2.2.2. TB case finding

For 2014, TB case-finding data were reported from 12 OCB projects (out of 20 projects implementing TB activities). In these projects, a total of 4324 TB patients were registered during the year (Table 1). Some projects reported a considerable decrease in the number of registered TB patients (for example in Mavalane (Mozambique), 787 TB cases were registered in 2014, compared to 1237 in 2013). The largest TB cohorts remain in South Africa, Zimbabwe, and Mozambique.

OCB continued providing access to molecular diagnosis of TB, mainly through support for the implementation of Xpert MTB/RIF.

Among new TB cases, the average proportion of confirmed pulmonary TB cases – by smear microscopy and/or by Xpert MTB/RIF – was 26%. The proportion of extra-pulmonary TB (EPTB) cases continues to be lower than expected in most projects, suggesting that these cases may be being missed. This implies the need for more thorough clinical examination of patients with TB symptoms and improved interpretation of chest x-rays.

2.3. PATIENT ENROLMENT

2.3.1. Pre-ART enrolments

In 2014, a total of 24,660 people were newly registered for HIV care and treatment in OCB-supported facilities (Figure 2). A package to prevent opportunistic infections, con-

sisting of cotrimoxazole, isoniazid preventive therapy (IPT), and screening of patients with severe immunosuppression for cryptococcal disease, was implemented in 11 projects utilising both laboratory triggered screening and point of care testing at the clinic site. A new point of care diagnostic test for TB (TB LAM) was also introduced in DRC and Guinea to aid the diagnosis of TB in patients with advanced immunosuppression.

2.3.2. ART enrolments

A total of 33,061 adults and children were initiated on ART in 2014 (Fig 3). Of these, 3074 (9%) ART initiations were made in the MSF fully supported sites. Overall there were 2453 paediatric initiations (fig 4) representing 7% of all initiations. In accord with the WHO guidelines, all countries, apart from South Africa, adopted option B or B+ (lifelong ART for all pregnant women regardless of CD4

Table 1: Tuberculosis case detection in OCB projects, 2009-2014

	2009*	2010	2011	2012*	2013*	2014*
Number of projects reporting data	14	21	22	17	21	12
Total number of TB cases registered	4,198	8,741	8,255	5,960	6,086	4,324
New cases	3,713	7,641	6,869	5,423	5,729	4,005
% Confirmed pulmonary positive**	35	35	34	41	40	26
% Smear-negative pulmonary	40	43	45	35	46	65
% Extra-pulmonary	25	22	22	24	13	9
Retreatment cases (% of total)	495 (12)	1,100 (13)	884 (11)	560 (9)	357 (6)	319 (7)

* Not all data were available from all OCB projects with a TB component

** Confirmed by smear microscopy or GeneXpert

count), implemented ART initiation at CD4 < 500, and initiated ART in all children less than five years. Kenya moved to include all children under 10 for ART initiation. The majority also implemented initiation of ART for serodiscordant couples regardless of CD4 count.

Only three countries - Mozambique, Guinea and the DRC - continued to use a zidovudine (AZT) based first line treatment, while all other countries have moved to the less toxic one pill once a day regimen including tenofovir (TDF), lamivudine (3TC) and efavirenz (EFV). All projects have now shifted from stavudine-based first line treatment for children to either AZT or abacavir (ABC). However, apart from Kenya and South Africa, none are providing the protease inhibitor lopinavir/ritonavir as the standard first line regimen due to the ongoing lack of access to thermostable formulation of the drug. Scaling up access to second line treatment through implementation of viral load testing/monitoring, clinical mentoring and attempts to decentralise the switch to second line treatment was a challenge during 2014 and will continue to be a major operational focus for 2015. Figure 5 shows the proportion of the cohorts on first, second and third line regimens. India is a specific case as the project focuses on ac-

cess for patients on, and failing, second line treatment. The high proportion of patients on second line regimens in India is very much a reflection of more frequent access to routine viral load monitoring, facilitating the identification of failing patients. Only three projects have patients on third line treatment, specifically India (25), Khayelitsha and Murambinda (1).

2.4. HIV AND TB OUTCOMES

2.4.1. ART outcomes

2.4.1.1. Adult ART outcomes

The current target for “remaining in care” (RIC) in ART programmes is for more than 85% of the cohort to be retained in care on ART at 12 months. For the 13 projects reporting cohort outcomes for patients initiated on ART during 2014, retention in care at 12 months ranged from 71% in Nsanje to 96% in Changara (Figure 6).

In many of the OCB-supported projects (namely South Africa, Lesotho, Mozambique, Malawi, Zimbabwe, Kenya, and DRC), alternative refill strategies (using community ART groups and adherence clubs) have been implemented alongside clinic-based

‘fast track’ systems in order to decrease the burden on both the health facilities and patients; the introduction of routine viral load testing/monitoring in some settings has also enabled a move towards a once a year clinical visit, again allowing clinicians to dedicate more time for patients with significant medical or adherence problems. 2014 also saw substantial interest from Ministries of Health in South Africa, Zimbabwe, Lesotho and Malawi, with MSF playing a major role in the development of national strategies for their scale up and implementation.

As viral load testing/monitoring is scaled up across the sites as part of the UNITAID funded viral load initiative, suppression rates across the cohorts in Kenya, Zimbabwe, Lesotho and Malawi show cross sectional suppression rates (viral load less than 1000 copies/ml) of between 86-90%.

2.4.1.2. Paediatric ART outcomes

Retention in care rates for paediatrics remain higher than adults ranging from 71-98%. However, early analysis of cross sectional virological data for those remaining in care are significantly lower than for adults, with up to 30% of children having a viral load greater than 1000 copies /ml in a number of cohorts. A focus during 2014 has been on the implementation of systematic disclosure counselling for children and to ensure that management of high viral loads utilises a more systematic approach to address the challenging social circumstances that often face these children and adolescents.

Figure 5: Percentage of cohort on first, second and third line regimens

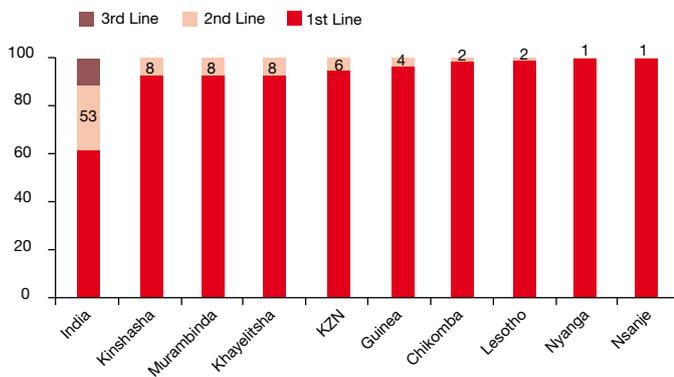
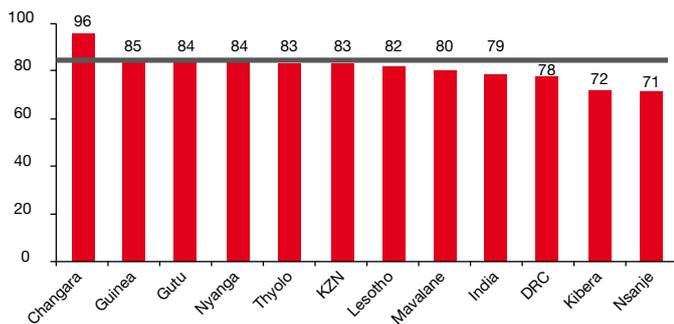
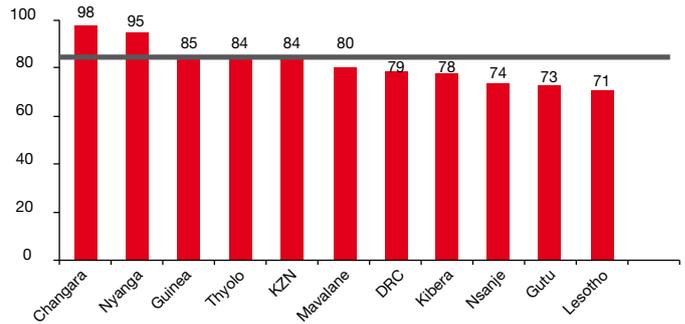


Figure 6: Adult Retention In Care at 12 months, for patients initiated on ART in 2013



(Target for retention in care at 12 months is 85%)

Figure 7: Paediatric Retention In Care at 12 months for patients initiated on ART in 2013



(Target for retention in care at 12 months is 85%)

2.4.2. TB outcomes

TB treatment outcomes for patients with drug-sensitive tuberculosis were reported from 8 projects for a total of 2330 patients registered during 2014. The average treatment success rate among patients with drug sensitive (DS) TB was 76%. In other projects, either treatment outcomes were not reported or patients, once diagnosed, were referred to the respective National TB Programmes (NTP) for management without any further MSF support or involvement (and thus no follow-up of outcomes).

The target treatment success rate of >85% was not achieved in any of the projects reporting outcomes. Death rates exceeding the 10% target were observed in Lesotho (23%) and Mauritania (11%). High treatment interruption rates (i.e. 10% or more) were observed in Kibera, Kenya (11%), Bassikounou, Mauritania (26%), and Chhattisgarh, India (21%).

2.5. DRUG-RESISTANT TB

In 2014, 359 patients with multidrug-resistant tuberculosis (MDR-TB, a resistance to at least isoniazid and rifampicin; the two most potent TB drugs), and 91 patients with other forms of DR-TB, were initiated on treatment in six OCB projects. This is considerably less than in 2013 which saw 536 patients with MDR-TB initiated on treatment. The most significant decrease in the number of enrolled MDR-TB patients was in Donetsk, Ukraine (139 in 2014 versus 249 in 2013). This was due to armed conflict breaking out and the related insecurity in the region. Khayelitsha accounted for 133 MDR TB treatment initiations in 2014 (150 in 2013), and in Mumbai 40 patients with MDR TB were initiated on treatment in 2014 (50 in 2013).

Outcomes of DR-TB treatment were reported from the projects in Mumbai and Donetsk only. In Mumbai, among 28 patients registered with MDR TB during 2012, 14 (50%) were successfully treated, 7 (25%) died, 6 (21%) interrupted treatment and 1 (3%) failed treatment. In Donetsk, outcomes were available for 118 patients enrolled in 2012: 32 (27%) achieved treatment success, five patients (4%) died while on treatment, 70 patients (59%) interrupted treatment and 9 (8%) failed treatment.

2.6. PMTCT

Activities aimed at preventing mother-to-child transmission (PMTCT) of HIV are fully

described in the Sexual and Reproductive Health section of this report (cf. §2.8).

2.7. INTEGRATION OF HIV, TB AND DR-TB ACTIVITIES INTO NON-VERTICAL HIV PROGRAMMES

In 2014, PMTCT was integrated into the MCH (Maternal and Child Health) programme in DRC (Masisi) (cf. Sexual and Reproductive Health chapter). PMTCT was not integrated into the MCH programme in South Sudan as planned. HIV/TB programming began in Central African Republic and Algeria and will continue into 2015.

2.8. PATIENT AND COMMUNITY SUPPORT

With the further scale up of viral load testing, projects have further adapted and simplified the packages for enhanced adherence counselling. Increased attention has been given to children and adolescents with virological failure, with specific approaches developed in South Africa, Malawi and Zimbabwe.

Programmes in Mozambique and Malawi developed specific programmes focused on key populations at high risk of contracting HIV such as commercial sex workers.

All projects consolidated their approaches for alternative drug refills for stable patients on ART. In Kenya, adherence clubs have been piloted, mixing HIV and NCD patients in groups for drug refills along with adaptation of the traditional Community ART group model to fit local contexts.

Toolkits for DR-TB treatment have been further elaborated in Khayelitsha, and patient support tools for hepatitis C co-infection have been developed.

2.9. LABORATORY SUPPORT IN HIV/TB

The total number of GeneXpert instruments for the diagnosis of sensitive TB and rifampicin resistant TB remained stable in 2014. Although there has been an increase in the number of rifampicin-resistant cases, a survey in three countries (Kenya, Zimbabwe and Mozambique) showed that confirmation of MDR-TB remains extremely low (27%), mainly due to the limited local laboratory capacity of liquid culture and line probe assay (LPA) in these countries. WHO recommends that in settings with a low prevalence of rifampicin resistance a second GeneXpert test be performed while awaiting laboratory confirmation. In most projects GeneXpert con-

tinues to be used as the first line diagnostic test, replacing smear microscopy; only a few sites use GeneXpert as an 'add-on' test after a negative smear microscopy result (Malawi, Mozambique and Lesotho). Several projects have also started using GeneXpert for the diagnosis of extra-pulmonary TB.

The number of Alere Pima point-of-care (POC) CD4 analyzers deployed in OCB sites remained stable in 2014 with 30 instruments performing approximately 15,000 tests. The commercial launch of new POC CD4 technologies was delayed in 2014 with only one technology being prequalified by WHO (FAC-SPresto). This new test, together with the Daktari and Visitect, will be evaluated in 2015 in Zimbabwe.

Access to viral load testing saw a steady increase in 2014, with approximately 50,000 tests being performed either directly using the bioMérieux instruments (Malawi, Zimbabwe and Mozambique) or by sending dried blood spot (DBS) samples to an external laboratory (DRC, Guinea and Lesotho). The Ministries of Health of Malawi, Zimbabwe and Mozambique began the rollout of viral load testing nationally. An Abbott viral load machine has also been ordered for DRC and is expected to be implemented during the first quarter of 2015 in Kinshasa. During the rollout of viral load testing we have learnt that "having the test is not enough" and that successful implementation requires comprehensive co-ordination, especially from the medical staff, so that results are acted upon, counselling performed and a switch decision made. Significant work has been invested in monitoring and evaluation (M&E) tools to monitor its impact. However, challenges remain in the documentation of the viral load cascade.

The new CrAg lateral flow assay for the diagnosis of cryptococcosis has been implemented in most HIV projects. The test has been introduced at laboratory level and is performed systematically on all samples with a low CD4 count (<100 cells/uL). The validation of the CrAg LFA in finger prick whole blood has allowed decentralization of the test, and the project in Lesotho has taken the lead to pilot its implementation at clinic level where it is performed by lay counsellors.

3. MONITORING, EVALUATION & OPERATIONAL RESEARCH

2014 saw the introduction of a number of national M&E systems within our projects.

In Kenya, a full electronic medical record (EMR) system has replaced the paper based file system, whilst various other EMR systems have been implemented in Malawi, Zimbabwe and Lesotho. Mozambique, Guinea, DRC and some sites in Zimbabwe continue to use Tier.net.

In 2014, there was a continued focus on implementation of HIV viral load monitoring, and community models of care. A new focus area is mHealth, specifically the use of SMS for reporting results and sending motivational messages to patients.

Four sites were added to the Intersectional Unitaids-funded HIV Diagnostics Project, bringing the total number of sites to 15. The project, which is coordinated by OCB and the Access Campaign, evaluates tests for decentralized measurement of HIV viral load, CD4 testing, and early infant (HIV) diagnosis in resource-limited settings. Planning and protocol development started for several field validations of diagnostic tests using Unitaids funding, including evaluations of several new tests that are not yet commercially available.

MSF also received Unitaids funding for an Intersectional Project to evaluate a new treatment for hepatitis C in HIV-hepatitis C co-infected individuals. This project is being coordinated by OCG. OCB has sites in Kenya and India.

In Kenya, a protocol was approved for MSF to host a site in Kibera for the Prospective study of Lopinavir based ART for HIV Infected children globally (LIVING study), a DNDI-

led trial of a new form of ARV pellet for treating HIV in children.

In Malawi, enrolment of a cohort of women (mothers) entering the PMTCT B+ programme in Thyolo District was completed at the end of June, and work is in progress to document all infants born to women in the cohort. The mothers and their infants will be followed-up until the end of 2015.

Also in Malawi, a pilot study of male medical circumcision using the PrePex device (a non-surgical device for circumcision of adult males) was completed, in collaboration with the University of Washington in Seattle, USA and the US Centers for Disease Control and Prevention (CDC). The Malawi mission is currently engaged in discussions within MSF and the Malawi Ministry of Health regarding acting on the results and implementing the PrePex device to scale-up male medical circumcision in Malawi.

4. HIV/TB TRAININGS

Four categories of training were carried out in 2014, the first three hosted in Cape Town by the South African Medical Unit (SAMU):

1. One HIV/TB programmatic course, which was attended by 29 intersectional participants.
2. Four two-week advanced HIV/TB clinical courses, training a total of 29 intersectional participants, were conducted in Cape Town. This course continues to receive enthusiastic feedback from the participants.

3. A one-week drug-resistant TB course was conducted in Cape Town attended by 21 intersectional participants.

4. Five decentralised HIV/TB courses were conducted in 2015, two in French and three in English. French courses were run in Conakry in Guinea (23 participants, mostly doctors) and Kinshasa in the DRC (25 participants, mostly doctors), and English ones in Roma in Lesotho (17 nurses), Buhera in Zimbabwe (7 doctors and 17 nurses) and Nsanje in Malawi (18 clinical officers). These decentralized courses allow for a greater number of participants to benefit from the training, including a greater proportion of MoH staff.

On a separate occasion, an evaluation of paediatric resources was conducted in Malawi by a paediatrician from Khayelitsha, Cape Town, followed by a short paediatric training course for nurses and clinical officers.

5. The centralised Cape Town-based basic course was handed over to the Cape Town health authorities at the end of 2013 in favour of an e-learning course being developed by MSF. Development of the e-learning course has taken longer than initially expected but is now scheduled for completion by the end of 2015. This should allow a far wider learning audience to be reached.

5. LOOKING AHEAD BASED ON LESSONS LEARNED IN 2014 AND PROSPECTS FOR 2015

- Increased focus will be made on identification of paediatric HIV infection and management of virological failure in children.
- Improved PMTCT counselling must be a priority to reduce the high rates of loss to follow up seen in the initial roll out of PMTCT B+.
- Implementation support to improve the implementation of the viral load cascade will continue with particular advocacy towards the decentralisation and task shifting of the switch decision.
- Further emphasis will be placed on the provision of care, including new biomedical interventions, for key populations.
- Treatment of hepatitis C co-infection will start in two sites as demonstration projects of treatment feasibility.
- Advocacy for improved TB diagnostics is needed including use of Xpert as the first line test in all sites.
- Simplification of DRTB regimens and ensuring access to new drugs.
- Provision of HIV /TB care in emergency contexts must be seen as a priority for 2015.

INFECTION PREVENTION AND CONTROL

1. OVERVIEW

The unit of Infection Prevention and Control (IPC) was mainly dominated by the interventions in the Ebola Virus Disease (EVD) outbreak in West-Africa. Most of the unit's efforts were oriented towards the response to this epidemic.

Protocols for IPC were developed and adapted for EVD settings. Efforts were also devoted to identifying new material required for Ebola virus (EBV) infection control activities, such as personal protective equipment and safe injection materials.

The emergence of life-threatening infections such as EBV and multi-resistant bacterial infections highlights the importance of efficient IPC activities in all MSF-OCB projects.

2. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- Although considerable efforts were done over the past years regarding the implementation of the standard precautions of IPC, which include good hand hygiene, appropriate use of personal protective equipment, measures to prevent needle stick injuries, correct cleaning and disinfection of surfaces and reusable material, proper waste management and good respiratory hygiene, there is still a huge gap between the knowledge gained over the past decades and the implementation of the IPC practices in the reality.
- Hospital managers need information for action to prevent healthcare associated infections (HAIs). Particularly in low-income countries, where the resources to implement surveillance on HAIs are not always available, there is a need to emphasize the monitoring of the IPC activities to prevent HAIs. Unfortunately, up to today there is no suitable tool for that purpose that could be used in resource-poor settings. As long as there are no data collected, the problem will be hidden, and consequently no action will be taken.

PROSPECTS FOR 2015

- We will emphasize on the measurements of IPC practices in our projects, such as the assessment of the hand hygiene compliance.
- The new evidence-based protocol for Wound Care will be finalized.

INTENSIVE CARE

1. OVERVIEW

During the present year intensive care activities have continued to evolve in our two trauma centres of Haiti (Tabarre) and Afghanistan (Kunduz). Our only paediatric intensive care unit in Sierra Leone (GRC-Bo) was closed, due to the Ebola outbreak, in October 2014.

Both trauma-related intensive care units (ICU) operated as level 2+ services (level 0 is the most basic and level 3 is the most complex level of ICU); this is so far the highest level of care achieved in the global MSF movement. Invasive mechanical ventilation is for now the most challenging activity in this field, due to the high demand of monitoring for those patients undergoing this treatment, as well as the required high skills of the staff. Nevertheless, results from both of these units are promising and constant support and training for staff is planned according to specific needs.

2. PROGRAMME ACTIVITIES

2.1. ACTIVITIES AT PROJECT AND MISSION LEVEL

During 2014, intensive care was provided in three OCB missions: Afghanistan, Haiti and Sierra Leone. Specific data on intensive care was collected in these projects (Table 1, and Table 2, Annex) and a total of 1,737 ICU admissions were reported during the year.

2.2. COUNTRY SPECIFIC ACTIVITIES

2.2.1. Afghanistan

OCB continues to provide intensive care in Kunduz project, a trauma centre in northern Afghanistan. This ICU had a capacity of four beds until November 2014, when it was moved to a new structure and six beds were functional thereafter. During 2014 the biggest challenge has been to maintain an acceptable level of nursing care, in order to reduce possible complications and improve outcomes.

The standardized ICU electronic database was introduced at the beginning of the year, allowing a more in depth understanding of the activities and outcomes of this service.

During 2014 a total of 367 patients were hospitalized in the ICU, with a mean length of stay of 3.0 days. Main causes of trauma seen were: road traffic accidents (34%), other accidental causes (22%) – mainly falls and gunshot (20%) and bomb-related (15%) injuries. The burden of head trauma patients in this setting is very important due to the lack of

Table 1: OCB ICU activities in 2014

ICU 2014	Kunduz	Tabarre	GRC-Bo ^a
Admissions			
< 5 years	27	17	ND
≥ 5 years	340	381	ND
Total	367	398	972
Deaths			
<5 years	3	2	183
>5 years	39	37	12
Total	42	39	195

GRC: Gondama Referral Centre; ICU: intensive care unit; ND: no data available

^a Data available from March to October 2014

qualified referral centres, accounting for almost 50% of the morbidities seen.

2.2.2. Haiti

OCB continues to provide intensive care in Tabarre project, a container-based hospital in the capital city of Port-au-Prince. The ICU had a capacity of seven beds until the end of November, when the unit was increased by two more beds due to the increasing needs. Patients seen in this centre have both acute surgical and trauma-related conditions. During the entire year, the unit was functioning as a level 2+ ICU, finally reaching this upgrade, which was successfully achieved by improving the standards of care and knowledge/skills of the staff in a sequential way. The running of activities during 2014 has been smooth and nursing care has proved to be the pillar of the good general results of the unit.

During 2014 a total of 398 patients were hospitalized in the ICU, with a mean length

of stay of 3.8 days. Main causes of trauma were: gunshot related injuries (35%); road traffic accidents (31%); acute surgical conditions (14%) – mainly appendicitis; and penetrating injuries (mainly knives) caused by sharp objects (12%). The high level of violence in this urban setting is reflected in these figures.

2.2.3. Sierra Leone

The Gondama Referral Centre (GRC) in Bo district provided paediatric and obstetric health care. The centre unfortunately had to stop its activities in the month of October due to the increasing concerns related to the Ebola outbreak in the area.

This unit has offered a basic level of care since its inception, in line with the available resources. As of the second trimester of 2014, there was an increased focus in upgrading the level of care; even if the early closure of the hospital did not allow this goal to

be reached, a decreased mortality rate (20% compared to 26% in 2013) may reflect those efforts.

During the reported period for 2014 (March to October), a total of 972 patients were seen in this 20-bed ICU. The main morbidities encountered were malaria, diarrhoea, respiratory infections and malnutrition; a direct consequence of the demographics of the patient population (the majority were children younger than five).

3. HUMAN RESOURCES AND TRAINING

In all the countries where intensive care activities were offered, intensive care does not exist in the national curricula. International

specialists are still the cornerstone of these units, as within the movement there are so far no guidelines on this subject. Constant training, including both scheduled training sessions and bedside training, is the main tool so far for improving the needed skills of the staff in the field.

Punctual external courses, such as the Advanced Cardiac Life Support (ACLS) and Advanced Trauma Life Support (ATLS) have been offered to some staff. Although not being official MSF trainings, these are recommended outlines for MSF-OCB activities, and have been coordinated according to specific field needs and were organized at field level.

For the remaining units, continuous training of nursing care is essential; as this may

be the most important activity for providing quality care. Nursing care protocols have been developed in Kunduz, and will be used as a start for the standardization of nursing care in both the Tabarre and Kunduz units.

The Basic Assessment and Support of Seriously Ill Patients in Developing Healthcare Systems (BASIC DHS) training that aims to tackle the problem of non-specialized doctors being in charge of critically ill patients, was organized and run in Central African Republic. While MSF-OCB does not have specific ICUs in this country, it was held with the purpose of improving the level of care offered in regular hospitalization wards.

4. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- Nursing care trainings should be reinforced. Both trainings and specific guidelines need to be developed and a standardized approach offered.
- Merging efforts at coordination level, for both our trauma centres, has proven to be a good strategy to share and learn from one another and should be an example to be followed and continued in the future.

PROSPECTS FOR 2015

- Ongoing efforts to develop and standardize guidelines for intensive care in our settings. As an ongoing project, the BASIC DHS course for nurses is currently under development and will be finalized and offered at field level during the year.
- The use of peripherally inserted central catheters PICCs will be introduced in a trial period in the ICU of Tabarre only, as it demands a certain standard of nursing care (which has still not been achieved in other settings). For this, bedside training with a strong component on infection control, as well as refresher courses, will be organized.
- Expatriate staff working in activities related to intensive care will continue to be followed up by the intensive care referent.

MALARIA

1. OVERVIEW

Malaria continued to be a leading cause of morbidity and mortality in OCB-projects. Countries such as South Sudan, the Democratic Republic of Congo (DRC) and the Central African Republic (CAR) were particularly affected.

The implementation of Seasonal Malaria Chemoprevention (SMC) in Niger was very successful, but the implementation of other preventive tools such as Long Lasting Insecticide Treated Nets (LN) needs to be reinforced.

The pan pLDH Rapid Diagnostic Test (RDT) will hopefully be implemented in 2015.

In terms of case management, the focus of OCB remains on artemisinin efficacy (Cambodia), ensuring adherence to treatment and pharmacovigilance during the implementation of the new artemisinin-based combination therapy (ACT), Dihydroartemisinin-Piperaquine. The implementation of injectable artesunate has been very successful.

The implementation of the policy on malaria in pregnancy needs to be strengthened.

Efforts will be made to try to better understand malaria transmission in South Sudan and DRC.

Scaling-up of existing activities or implementation of additional innovative preventive activities such as Intermittent Preventive Treatment for children (IPTc) is needed.

2. PROGRAMME ACTIVITIES

2.1. MALARIA CASES

In 2014, the total number of confirmed malaria cases treated in OCB projects was 278,009, an increase of 26% compared to 2013 (Figure 1).

About 90% of all malaria cases were treated in four missions: CAR, South Sudan, DRC and Niger (Figure 2). More than 14,000 cases of severe malaria were reported (6.4% of the total number of malaria cases); the highest burden of severe malaria was reported in the missions of DRC, Niger and Burundi.

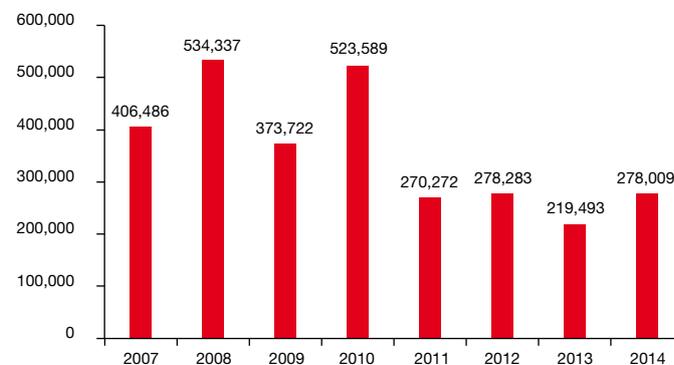
The number of treated cases continued to increase in South Sudan and DRC missions (Figure 3). Both countries were confronted with malaria emergencies: Gogrial in South Sudan and Zongo in DRC.

2.2. DIAGNOSTICS

During the course of 2014, a total of 514,876 rapid diagnostic tests (RDTs) were performed in OCB projects.

The proportion of positive RDTs was highest in projects such as Ouango (CAR, 71%), the emergency interventions of the PUC (DRC, 66%), GRC (Sierra Leone, 65%), Zongo

Figure 1: Confirmed malaria cases in OCB projects, 2007-2014



(DRC, 63%) and Gogrial (South Sudan, 57%). This indicates high malaria endemicity in these settings.

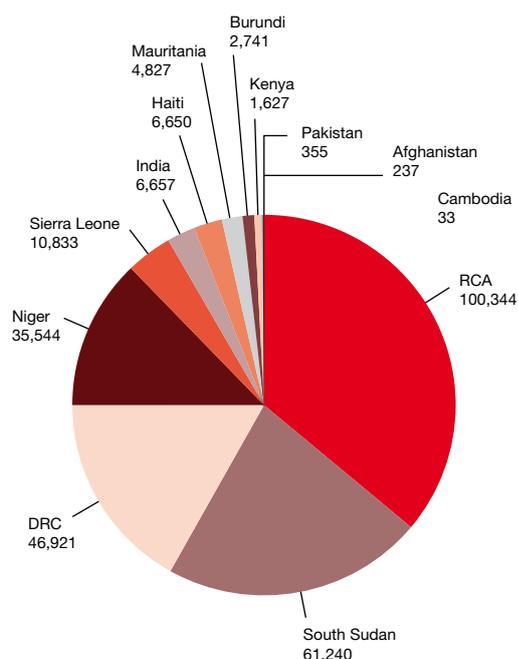
Out of the total number of malaria cases reported in OCB projects, the proportion of confirmed malaria cases has continued to increase over the years, standing at close to 100% in 2014. This indicates that the MSF-policy of systematic parasitological confirmation of all malaria cases is now well implemented and adhered to.

The new RDT for malaria, the pan pLDH, has not yet been implemented.

2.3. CASE MANAGEMENT – ARTEMISININ-COMBINATION THERAPY

A pilot project focusing on the elimination of artemisinin resistance/tolerance in Preah Vihear province, Cambodia was launched. It involves a Targeted Malaria Elimination component (i.e. the mass distribution of malaria treatment in villages with confirmed malaria) together with a screening (active and passive) and treatment strategy, using polymerase chain reaction (PCR) as the diagnostic tool and Dihydro-artemisinin/Piperaquine as preventive treatment.

Figure 2: Numbers of confirmed malaria cases treated by OCB mission, 2014



A second malaria prevalence survey conducted in 23 villages in Chey Saen District in Preah Vihear Province in September/October using PCR confirmed the very low *P falciparum* prevalence of 0.73%. Nevertheless, out of the 11 Pf-carriers, six (54%) had a genetic marker associated with malaria resistance to artemisinin.

2.4. CASE MANAGEMENT- SEVERE MALARIA

Injectable artesunate is used as first line treatment for severe malaria in MSF-projects. A qualitative survey evaluating the perception and practices of injectable artesunate among medical staff in Burundi showed excellent results: the drug is considered to be highly effective and easy to use.

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 underused in quite a few of our projects. This needs to be addressed.

2.5. COMMUNITY MANAGEMENT OF MALARIA

A small community malaria project was implemented in Mukenke, Burundi.

The new malaria project in Cambodia will have a strong community component, utilising a network of Village Malaria Workers and Mobile Migrant Workers for the detection and treatment of malaria cases.

Community activities are also being considered in the Bangassou project in CAR, Bikenke in DRC and Pibor in South Sudan.

2.6. OUTBREAKS

Malaria emergencies were reported in South Sudan and DRC.

In Gogrial the number of malaria cases tripled – from 11,040 cases in 2013 to 32,980 cases in 2014 (Figure 4). This was mainly due to early, heavy rainfall, the lack of LNs and the collapse of primary health care.

Malaria emergency interventions were launched in DRC.

2.7. PREVENTION

Seasonal Malaria Chemoprevention (SMC) was scaled-up in Guidam Roundji (Niger): a total of 271,444 doses of preventive treatment (SP/AQ) were distributed to children between the ages of 3 and 59 months. An intersectional evaluation was conducted: the intervention was considered successful and will be repeated in 2015.

Vector control through the distribution of LLINs is an essential and effective component of any malaria control program. However, this activity is not always implemented correctly in our existing projects or during emergencies.

Figure 3: Malaria trends in OCB-missions 2010-2014

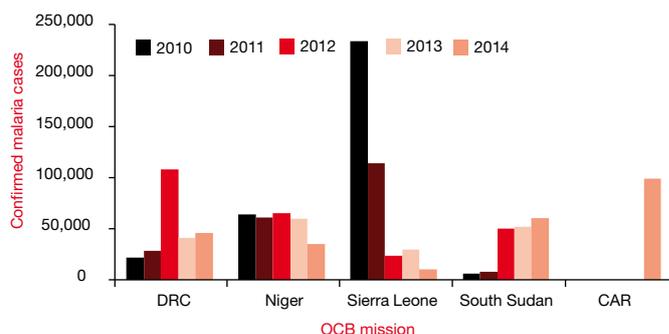
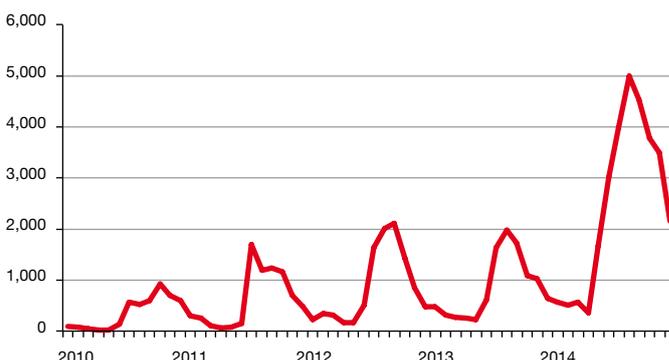


Figure 4: Malaria trend in Gogrial, South Sudan, 2010-2014



Malaria emergencies in Doro (2013) and Gogrial (2014) have raised concerns about the effectiveness of the current vector control package implemented in South Sudan, and a decision has been made to carry out operational research on this topic.

2.8. MALARIA IN PREGNANCY

Surveys were conducted in different MSF projects to evaluate the implementation of the MSF policy on malaria in pregnancy. The management of uncomplicated malaria and the Intermittent Screening and Treatment strategy seem well implemented, but the management of severe malaria and the provision of LNs are only correctly implemented in half of our projects.

3. OPERATIONAL RESEARCH

- A study evaluating the prevalence of congenital malaria and the validity of RDTs for diagnosis of congenital malaria was carried-out in Kirundo, Burundi. The PCR-prevalence was found to be extremely low (0-1.3%). Due to the low prevalence, the sensitivity of the RDT could not be evaluated; the specificity of the SD Bioline HRP2, the Carestart pan-pLDH and microscopy were 99.3% (95%CI 97.6-99.8), 100.0% (95%CI 98.2-100.0) and 100.0% (95%CI 98.7-100.0) respectively.

- Results of the first baseline survey in Preah Vihear, Cambodia were published in the Malaria Journal. Results of the second survey were reported.
- In collaboration with Epicentre and the Evaluation Unit in Vienna, an intersectional evaluation of the SMC-program in Niger took place, assessing quantitative and qualitative indicators and comparing different delivery models. Program coverage was excellent (>95%) and the number of adverse effects below 4%.

4. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- There is a need for better diagnostic tools, such as the pLDH-RDT.
- Malaria transmission in contexts such as South Sudan and DRC is still poorly understood and this has implications in terms of identifying an appropriate strategy for malaria control.
- After the malaria emergencies in South Sudan, there is need to evaluate the effectiveness of the current vector control tools.
- Having an effective pharmacovigilance system during interventions such as SMC (Niger), mass drug administration (Cambodia) or IPTc (South Sudan, CAR) is essential. However the feasibility of implementing such a system is a real challenge.
- Resistance has been confirmed and a containment project has been launched in Cambodia, but there is a need to monitor the efficacy of artemisin outside of the Mekong-region, such as in India and in Africa. In order to contain resistance and prevent the spread to other regions, a project in Myanmar has the absolute priority.

PROSPECTS FOR 2015

- A pan pLDH RDT (which has a better specificity compared to the RDT currently used in OCB projects - HRP2 RDT) will hopefully be implemented.
- Additional preventive pharmaceutical malaria interventions are planned: a pilot project of Intermittent Preventive Treatment for children is considered during emergencies or in contexts with high seasonality such as CAR, DRC and South Sudan.
- Dihydroartemisinin (DHA)-Piperazine DHA/PQ will be used as preventive malaria treatment in Cambodia and possibly South Sudan and CAR.
- In Bikenge (DRC), Bangassou (CAR), Pibor (South Sudan) OCB is considering implementing a community malaria project, as part of iCCM.
- Intermittent Preventive Treatment post discharge (IPTpd) is being considered.
- No new studies are foreseen, but there will be a continued focus on the issue of adherence to ACT and measures to ensure correct adherence to ACT.
- The use of rectal artesunate as pre-referral treatment should be reinforced.
- Research is planned in Doro, South Sudan, in order to better understand malaria transmission, entomology, and the efficacy of insecticides.
- In collaboration with the pharmacists, we will try to develop/improve the pharmacovigilance during IPTc, focusing on severe adverse effects.
- Targeted Malaria Elimination will be implemented in five villages in Preah Vihear, Cambodia.
- Capitalization of the Kirundo project in Burundi will be done.

MEDICAL STRUCTURES

INPATIENT DEPARTMENT

1. OVERVIEW

The total number of structures with an inpatient department (IPD) in OCB has increased over the course of 2014: 22 IPD structures were managed (excluding Ebola emergency projects) during the year, compared to 18 IPD structures in 2013.

Four types of structures were recognized:

- General Hospital (3): Ahmad Shah Baba (Afghanistan); Masisi (Democratic Republic of Congo [DRC]); Mon (India).
- Service- or Disease-Specific Activities (13): Khost and Kunduz (Afghanistan); Gitega and Kirundu (Burundi); AIDS Kinshasa and Nyabiondo (DRC); Tabarre (Haiti); Guidam Roudji (Niger); Timurgara (Pakistan); the Gondama Referral Centre (GRC - Sierra Leone); and Castor and Bangassou (Central African Republic [CAR]).
- Hospital-Based Activities (6): Martissant (Haiti); Doro, Gogrial, Bor and Pibor (South Sudan); Bassikounou (Mauritania).
- Emergencies (7): Central African Republic (CAR); the Philippines; South Sudan; Guinea; Sierra Leone; Liberia; and Syria.

2. PROGRAMME ACTIVITIES

2.1. ACTIVITIES AT A COUNTRY AND PROJECT LEVEL

In 2014, OCB provided inpatient care in 22 health facilities:

- Two structures were handed over from the emergency pool to the operational cells: Bangassou and Castor (CAR).
- Five structures were closed/handed over during 2014: Ouango (CAR), Guiuan (Philippines), Jabal Akkrad (Syria), GRC (Sierra Leone - on standby due to the Ebola outbreak), and Mon (India).

2.2. HOSPITAL SIZE (EXCLUDING EMERGENCIES)

The total number of beds in the OCB portfolio continued to decrease from 1,313 in 2013 to 1,203 in 2014. The five largest structures in terms of beds are presented in figure 1.

The average size in terms of staff remained stable compared to 2013, with the largest hospitals ranging from 250-400 staff (figure 2). There was a total of 3,944 staff for IPD structures in 2014. In terms of admissions, including maternity and inpatient therapeutic feeding centre (ITFC) admissions, two of the hospitals with the largest volume were based

Figure 1: Top five OCB medical structure offering IPD services- number of beds, 2014

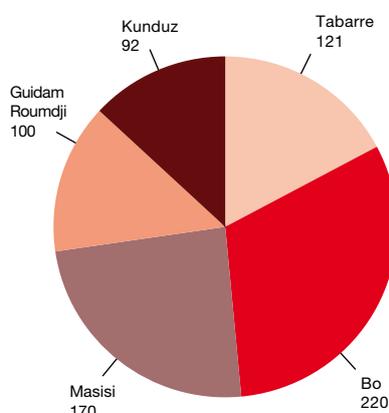
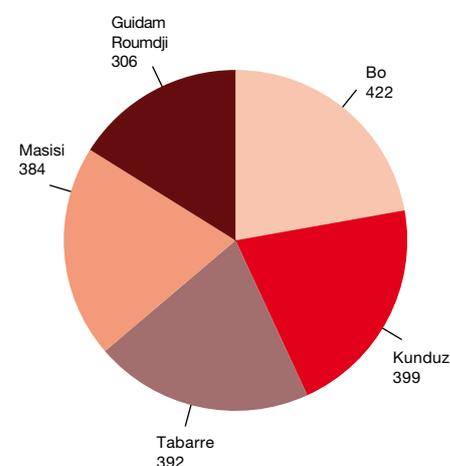
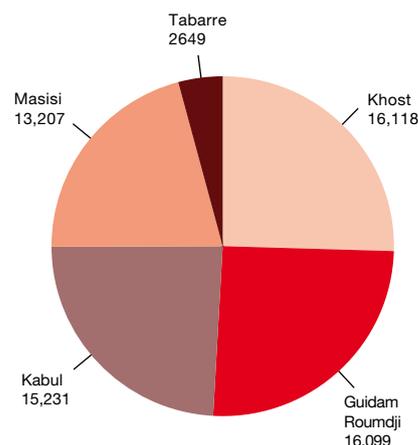


Figure 2: top five OCB medical structures offering IPD services - number of staff, 2014



in Afghanistan (figure 3). All factors combined (staff, volume of activities, beds), the Masisi and GRC projects were the largest hospitals in OCB. Kunduz (Afghanistan) and Tabarre (Haiti) have a high number of staff compared to the other IPD structures, as these are specialised hospitals offering trauma care.

Figure 3: top five OCB medical structures offering IPD services - number of admissions, 2014



3. DEVELOPMENTS

- The Hospital Management Team Training (HMTT) was successfully conducted twice in 2014. The training was reported to meet the challenges and needs of the hospital management teams in the field. A French session is planned by the end of 2015.

4. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- The PATIO system was perceived by all actors as a relevant tool to support hospital projects in the field in terms of design and planning of inpatient care activities.
- There are still issues with the data collection system across all projects. It was a challenge to gather proper data on time to produce the annual activity report.

PROSPECTS FOR 2015

- Due to the geopolitical developments in the supported countries and long term effects of the Ebola outbreak on the health systems in West Africa, new inpatients activities are foreseen for 2015 (paediatric care, trauma, and/or general).
- A new project (support to a district hospital and primary health care system) will be launched in Bikenge, DRC.
- A new surgical project in a hospital in Bar Elias (Lebanon) will be developed through a PATIO.
- An extension of the Kunduz project is foreseen in 2015.
- A new Sexual and Reproductive Health component will be proposed in Lesotho.
- Support to hospitals activities in Ukraine is planned in 2015.
- New inpatients activities will be planned in Bangui and Bangassou, CAR.
- Inpatients activities are planned in Pibor, South Sudan in 2015 and a proposal of Paediatric care in Bor will be assessed.
- The harmonization of the data collection system tools is planned.

MENTAL HEALTH

1. OVERVIEW

In 2014, the portfolio of Mental Health (MH) activities increased considerably, especially in emergency interventions where the number of projects with MH components has almost doubled (from eight new emergency projects in 2013 to 15 in 2014; Table 1, Annex). This significant increase results mainly from the outbreak of Ebola in Guinea, Liberia and Sierra Leone, along with major crises linked to conflict in South Sudan-Juba- and in Ukraine. MH activities were able to be implemented at the very beginning of the MSF intervention, demonstrating better integration of MH during emergencies.

In parallel in (Table 2, Annex) , some of the MH activities initiated last year in emergency settings have been extended to become longer term interventions, as the situation remains very unstable (Central African Republic (CAR) and Lebanon with Syrian refugees)

Of note, four projects with MH components had to be closed in 2014 due to security issues (both projects in Syria, one project in Libya and one in South Sudan-Gumruc), despite there being obvious MH needs.

At the operational level, MSF's interest in the issue of migration was made evident by several initiatives: i) the opening of a new program in Greece for victims of torture, ii) a short term project in the Democratic Republic of Congo (DRC) targeting refugees from CAR (Zongo), iii) an increase in ongoing activities in Egypt (the opening of a second clinic providing MH care for migrants, and specialized treatment for victims of sexual violence and torture) and Lebanon (the opening of a centre for women (maternity and SV care) in Shatila camp in Beirut where there are a considerable number of Syrian refugees), and iv) a fairly exhaustive exploratory mission conducted in the Balkan region in order to better understand the current migratory routes and the conditions of transiting migrants; this will guide medical operations next year which will include MH activities

Psychiatric care will continue to be developed. Apart from Ebola projects (where the period of hospitalization is short), psychiatric treatment (for at least the most common mental disorders) is provided by MSF in 40% of our projects (by psychiatrists or trained general practitioners (GPs)) Referral systems with existing psychiatric facilities have been set up in 46% of our projects (following thorough quality assessments). The development of integration of psychiatric care within MH activities improved especially in emergency contexts, where a list of essential drugs was setup. More psychiatrists have been also included in the pool of MH officers.

2. PROGRAMME ACTIVITIES

Excluding HIV/TB programs (where the "HIV-TB Community and Patient support" expatriates can be either health promoters or psychologists depending on the needs), MSF-OCB provided MH activities in a total of 44 projects across 22 countries in 2014, compared to 33 projects in 2013 (an overall increase of 33%). This increase was not so much related to non-emergency MH interventions (which were provided in 29 projects in 2014, compared with 25 in 2013), but to the significant increase in MH interventions during emergencies (provided during 15 emergency projects in 2014 versus 8 the previous year).

In terms of the volume of activities, six projects provided more than 2500 individual psychological sessions during the year (Timurgara, Cairo, Zongo, Kunduz, Doro and Bangui), which is quite substantial given that the average duration of one session is 30 to 45 minutes.

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

2.1 PSYCHOLOGICAL INTERVENTION DURING THE EBOLA OUTBREAK

As with other viral hemorrhagic fevers like Marburg and Lassa fever, MSF has many years of experience providing psychologi-

cal support as of part of the package of care during an Ebola outbreak. Indeed, the psychological related issues linked to the disease are numerous and can affect many different domains:

- The community: a deterioration in the social network, a climate of suspicion and physical isolation, disruption of cultural practices, fear and the spread of panic exacerbated by lack of information or misconceptions, impact on local dynamics and functioning of facilities, breakdown of family/social links (patients abandoned, survivors rejected, orphans), etc.
- Patients and their family: heavy physical and psychological symptoms, isolation,

witnessing other patients dying, loss of livelihood, worries/guilt for relatives, etc.

- Health care staff: high mortality rate versus limited curative treatment, strict protection measures including protective equipment that hampers communication, risk of being contaminated, negative perceptions from some communities.

In this vein, the main objective of the MH component during an Ebola outbreak is to alleviate suffering, but also to humanize patient care as much as possible. In each project, there are a team of counselors supervised by an expatriate psychologist. They support patients during their entire course of treatment, from admission as a suspect case until the time that they are discharged. Individual and group sessions are provided, and there is a continual focus on trying to improve the patient's psychosocial situation (by creating links with families, improving living condition in the Ebola centers and providing psychosocial support). When cured, patients often face stigma and rejection. Furthermore, the prevalence of post-traumatic stress disorders and depression amongst survivors is significant. As such, regular visits and contacts by telephone are made to assess a survivors' need for further psychological support. Special attention is given to children (patients and suspected cases whose parents have been diagnosed with Ebola) through individual sessions, group activities, recruitment and training of caretakers when needed, orientation with the remaining family or social services for orphans.

Families are also offered emotional support through individual and family sessions, especially at difficult moments such as the announcement of diagnosis or death, funeral procedures and when stigmatization is faced.

During 2014, staff support was ensured by sending a psychologist to each of the affected countries who could propose individual sessions, group support, stress management sessions and specific trainings.

2.2. INTERVENTION IN PHILIPPINES (TYPHOON)

Mental health activities were started at the very beginning of the MSF intervention, with three expatriate psychologists being deployed immediately after the typhoon hit the Philippines at the end of 2013. MH activities were part of the comprehensive medical care package provided in Eastern Samar Island,

including Guiuan city and its surroundings - one of the most affected areas.

MH activities included:

- psycho-education sessions to help the community better cope with the psychological trauma that they have suffered;
- individual sessions (psychological first aid or counselling);
- group support sessions (especially for children in the first phase);
- psychiatric care for severe cases.

This package was provided in: mobile clinics in the island barangays, the outpatient departments (OPDs) of the five rural health units, the inpatient department (IPD) of the regional hospital in Guiuan, and directly in the community when patients were not able to reach the medical facilities.

After two months of intervention, the number of patients presenting with psychological complaints linked to the typhoon decreased, while in contrast, the number of patients presenting with severe mental disorders increased (mainly psychosis and major depression). MSF recognises that patients with severe mental disorders are particularly vulnerable during an emergency phase. In the Philippines, many such patients are now chronic sufferers of these disorders because they have not been able to access treatment (due to an absence of psychologists and psychiatrists in the province, shortages of psychotropic medication and financial barriers). In many cases, the impact of the typhoon on the population and the health system has actually caused these patients' conditions to worsen.

MSF has lobbied strongly for the ministry of health (MoH) to develop MH care facilities, with some positive results: general practitioners are now allowed to prescribe psychotropic drugs; MSF, in collaboration with WHO, has been able to train key medical staff to be able to diagnose and manage the most common mental disorders; mental health care has become integrated in primary health care, with stable severe cases being referred to the corresponding rural health unit; follow-up of severe cases is undertaken at the Regional Hospital; and finally, all essential psychotropic drugs have been donated by MSF to the MoH.

2.3. OPERATIONAL RESEARCH

Three MH related researches were conducted in the above mentioned projects; two on

Ebola and one in Philippines, and a forth, concerning migrants and their MH needs in Sicily, is in process.

3. TECHNICAL GUIDANCE

Over the course of 2014, a number of activities were undertaken to develop or revise MH tools and guidelines, including:

- Finalization of the international MH policy.
- Finalization of the guideline on MH & psychosocial care for children (intersectional).
- Development of a first draft of the updated guideline on SV-MH.
- Participation in the update of the guideline on obstetric fistula.
- Participation in the Hepatitis C patient support guideline.
- Updating of the chapter on MH-PS minimum package in the nutrition guideline.
- Review of the WHO/UNHCR: "Assessment and management of conditions specifically related to stress-MH Gap intervention Guide Module".
- Review of the WHO "Clinical management of mental, neurological and substance use conditions: initial response in humanitarian settings".

4. TRAINING AND HUMAN RESOURCES

In 2014, the following MSF trainings included an MH component:

- The Sexual and Reproductive Health (SRH) training course for nurses and midwives - a module on psychological support to survivors of sexual violence.
- The Medical Health Services training (MHS) - MH policy and integration, and role of the medical staff (three times in 2014).
- PSP (population en situation précaire) - co-facilitation of the emergency module, and an evening session on MH.
- A three-day workshop on care for victims of torture (in Cairo) with the MSF-Egypt team and an external consultant - four modules linked with MH aspects.
- Ebola training for MSF expatriates - and external actors - a module on psychosocial support within the Ebola outbreak (weekly training between August and December).

OCB, in collaboration with two MSF-sections, participated in the organization and facilitation of the annual two-week MH train-

ing courses in Holland for field psychologists and supervisor counsellors (national and international staff). Eight OCB candidates participated.

In terms of human resources (HR), 69 psychologists/psychiatrists were deployed to the field in 2014 to cover 30 positions (ver-

sus 39 in 2013, equating to a 77% increase within one year). This increase corresponds with the substantial increase in projects, especially those for emergencies (half of the departures), which often consist of short term missions (e.g. for an Ebola mission, the average length of expatriation is 4 to 6 weeks). One of the challenges is maintaining a large

enough pool of MSF-experienced expatriates, given that the first stage of implementation in emergencies requires well-skilled professionals. Consequently, of the 69 staff deployed, only 10 MH expatriates were first missions, making it very difficult to increase the MH pool despite this being needed to cover increasing demands by the projects.

5. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

In the past, few MH activities have focused on children, despite the fact that there are usually always children affected by situations of crisis, be it violence/conflict, natural disaster, displacement, chronic disease or malnutrition. Living through any of these situations can result in the development of disabling psychological symptoms, with the potential for long term consequences. In 2014, several projects started to develop more specific activities aimed at addressing the MH needs of children (Philippines, Ukraine, South Sudan, and Afghanistan). These have included: increased identification of children in need, child/family sessions, therapeutic or activity groups, psycho-stimulation sessions for malnourished children, parents groups, technical training of health care providers to better detect children in need of psychological support and setting up of appropriate activities.

In parallel, an international guideline on MH and psychosocial care for children was drafted at the international level. Two expatriate staff specialized in child psychology were sent to contexts where we have large cohorts of children (Zimbabwe - for training on management of children who have been victims of sexual violence, and Kenya - for training on disclosure of HIV for children and their care takers).

PROSPECTS FOR 2015

The standard MH database needs to be improved to better capture the activities that we carry out in the different settings where we work. This would give us a better idea of the socio-demographic and clinical profile of our patients, and allow us to better adapt our activities to meet their needs. It would also allow us to further develop our operational research agenda in MH that was developed in 2014.

MSF OCB has made good head way in the field of psychiatric care in terms of treatment, referral of care, better integration of care (especially in emergency interventions) and increased staffing pools. Efforts to develop these areas further however, will continue in 2015, notably with the direction of a concept note and by the provision of further training for GPs in the diagnosis and management of common mental disorders.

NUTRITION

1. OVERVIEW

Despite the alarming information and difficult context in South Sudan and Central African Republic (CAR) at the beginning of the 2014, it was a quiet year in the field of nutrition for MSF-OCB. There were no major nutritional emergencies, however, MSF-OCB reinforced the nutritional monitoring system and set up integrated nutrition activities during medical emergencies.

In South Sudan, in the three states affected most by conflict (Jonglei, Unity and Upper Nile), alerts were raised in 2014 on a possible severe food crisis despite a good harvest in October 2013. Indeed, the food security situation deteriorated and became precarious and worrying due to persistent fighting, which destroyed the staple food market/trade, increased staple food price, disrupted agricultural activities, and was accompanied by movements of high numbers of internally displaced persons (IDPs). The high demands and local access constraints prevented the World Food Programme (WFP) from covering all food needs for the host and displaced population during the first semester. The international community set up action plans to mitigate the crisis through general food distribution, Blanket Supplementary Feeding Program (BSFP), Targeted Supplementary Feeding Programs (TSFP) and Outpatient Therapeutic Feeding Programs (OTPs).

MSF set up an intersectional surveillance system through the nutrition international working group, as well as a platform to share data and discuss strategies. MSF-OCB maintained its activities in Doro camp in Maban County, and re-launched activities in Pibor County when the security situation allowed. No nutritional crisis was observed in these areas.

The civil war in CAR resulted in a high number of IDPs in Bangui and destroyed the health system in the country. MSF-OCB started an emergency response in a camp for IDPs in Bangui, with an integrated Ambulatory Therapeutic Feeding Centre (ATFC), while cases in need for admission to an Inpatient Therapeutic Feeding Centre (ITFC) were referred to another NGO. Additionally, two projects (Bangassou and Ouango) for rehabilitation of hospitals and provision of secondary level health care were initiated. The (ITFC) activities were integrated in the hospital, and ATFC activities were managed by a local NGO supported by UNICEF. The nutrition programme in CAR had the second highest number of admissions after Niger, with a total of 2,105 (8.5%) admissions in 2014.

The total number of admission continued to decrease in the regular programmes (such as in South Sudan, Mauritania, India). No new projects were opened in 2014, apart from CAR. The Community-based Management of Acute Malnutrition (CMAM) pilot project planned for Niger was refused by the authorities and therefore was cancelled.

2. PROGRAMME ACTIVITIES

2.1. PROGRAMME ACTIVITIES AT PROJECT AND MISSION LEVEL

Overall, MSF-OCB treated 24,890 cases with Severe Acute Malnutrition (SAM) (including 5,446 complicated cases requiring admission to ITFC) in 2014 through twelve nutrition projects in eight countries. The majority of these cases (72%) were treated in Niger. This represents a decrease of 34% and 37% compared to 2013 and 2012, respectively. Most of the nutritional programmes were integrated in medical activities. Only two new nutritional projects were

Table 1: OCB Nutritional Projects in 2014

Type of Programme	Countries and Projects
Vertical Programmes / Emergencies Nutrition main activity / Emergencies	CAR (Bangui)
Integrated Programmes Nutrition integrated into medical activities	Afghanistan (Kabul); DRC (Nord Kivu); India (Chattisgarh); Niger (Guidam Roundji); Sierra Leone (Bo); South Sudan (Gogrial, Jonglei, Maban); CAR (Ouango, Bangassou), Mauritania (M'berra refugee camp, Fassala)
Targeted Nutrition Programmes Nutrition integrated into HIV or fistulas programmes for selected beneficiaries	Burundi (Gitega); DRC (Bandundu)

CAR: Central African Republic; DRC: Democratic Republic of Congo

opened in Ouango and Bangassou, CAR. The ATFC programme in Gogrial, South Sudan was closed and handed over to Action Contre Le Faim (ACF). Some programme activities were interrupted due to security reasons (Pibor County, Jonglei, South Sudan) or due to the Ebola Virus outbreak (Bo, Sierra Leone)

2.2. NUTRITIONAL EMERGENCIES

In Bangui, CAR, an ATFC was integrated in the emergency medical response for IDPs. Admission criteria in ATFC were simplified and adapted to the context of the first phase of the emergency response, by basing them only on the measurement of middle upper arm circumference (MUAC) < 125mm or presence of oedema.

2.3. NUTRITION PROGRAMMES

In 2014, the scope of activities focused more on Therapeutic Feeding Programs for SAM in response to the reduction of nutritional activities and projects, and in some projects, activities were limited to ITFC for complicated cases. No TSFP or BSFP were implemented in 2014. In addition, the number of vertical projects providing specific Targeted Nutritional Support to patients (such as HIV/tuberculosis programmes) decreased. An overview of all OCB nutrition activities is presented in table 2.

In the refugee camp M'berra in Mauritania, the level of SAM decreased compared to the two previous years. The screening activities in 2014 showed a lower prevalence (2.7%) of SAM with MUAC < 115mm compared to 2013 (5.1%) and consequently, programme admissions decreased from 3867 to 859 (78% reduction). In addition, a nutritional survey in 2014 confirmed the decrease of the prevalence of GAM from 20% to 9.9% and SAM from 5.9% to 0.8% compared to 2013. This could be explained by the regular Gen-

Table 2: Number of OCB nutritional programmes in 2014

Type of programme	No. of centres	No. of patients admitted
ITFC	10 in total 7 integrated in hospital	5,446
ATFC	27 in total 22 integrated in hospital/HC	19,444
SFC + Selective Feeding (PLW)	0	0
Specific targeted nutritional support	2	NA
Total		24,890

ITFC: intensive therapeutic feeding centre; **ATFC:** ambulatory therapeutic feeding centre; **NA:** not available; **PLW:** pregnant and lactating women; **SFC:** supplementary feeding centre

eral Food Distribution (GFD) since June 2014, preventive activities (nutrition education by ACF, cash distribution to women to buy food), and more income-generating activities in the camp (e.g. selling of cattle).

2.3.1. Therapeutic Feeding Programmes

The detailed programme data are presented in table 3 (Annex). There was a high proportion of children with SAM requiring hospitalisation in Afghanistan, CAR and South Sudan (Gogrial), which could be explained by the fact that activities were mainly provided in the hospital setting and the programmes were thus focused on inpatient care (only one ATFC attached to a hospital OPD existed in Kabul, no ATFC existed in Bangui and the ATFC in Gogrial was handed over).

In 2014, the cure rate (96.5%) significantly improved in M'berra camp, Mauritania, compared to 2013 (79.9%). This was mainly due to the emphasis on tracing the lost to follow up (LTFU) done by the community health workers (CHWs) in the camp, which led to a marked decrease in LTFU rate to 0.5%. However, the LTFU rate was higher in the ITFC (3.8%) and in Fassala (23%) due to lack of CHW tracing activities. The LTFU remained high in Bangassou (CAR – 27.6%) and Gogrial (34%). In other projects, the LTFU rate was good or acceptable, approximately 15%

in Kabul and Bangui. There was no available data from Bo project, Sierra-Leon.

3. TRAINING

During 2014, the Nutrition E-learning was migrated from Dokeos to the Moodle portal, and the technical support is now done by IT team from MSF-OCBA training unit. The training is shared with other OC's but OCB stays the owner of the course content.

4. OPERATIONAL RESEARCH AND DEVELOPMENTS

4.1. PUBLICATIONS

No studies were published in 2014.

4.2. ONGOING STUDIES

The CMAM project in Niger was cancelled after preparation phase due to lack of authorisation from local health authorities.

4.3. TOOLS AND GUIDELINES

- The International Nutrition guideline in English was released this year.
- The revision of number of other nutritional tools continued in 2014.
- The release of the "Nutrition Pocket Guide" as well as the "OCB nutrition protocol" was delayed to early 2015, due to shifts in human resources.

5. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

The lack of major nutrition emergencies in the last three years and the decrease of large nutrition projects had an impact on capacity building of human resources. Internationally, the nutrition coordinator position for the Intersectional Sudanese Taskforce couldn't be filled due to lack of HR, which impaired the quality of surveillance of the nutritional situation.

PROSPECTS FOR 2015

Operations

Unless emergencies occur, there is no plan from the operations to open new nutrition projects.

As hospital-based projects are growing, the focus will be put on improving hospital nutrition which will include two axes:

- The field piloting and dissemination of the new surgery and Intensive Care Unit (ICU) nutrition protocol.
- Improving quality of integrated malnutrition detection and care in paediatric wards.

Guidelines and tools

- Finalisation of the revision of pocket guide and standard protocols to be in line with new international nutrition guideline.
- Revision of the standard protocol for infants below six months of age.
- Evaluation of dissemination and use of the PLW nutrition protocol in the field.

Trainings

- Revision of E-learning tools to follow new guidelines and protocols.
- Discussion of the nutrition curriculum with the international nutrition working group.

Operational research

- Capitalisation of use of MUAC based intervention on pigmy population in DRC.

OPERATIONAL RESEARCH AND DOCUMENTATION

1. OVERVIEW

2014 had a number of key achievements. Operational Research (OR) played an active role in the unprecedented Ebola emergency response in West Africa. Several members of the OR units, epidemiologists and a number of trained alumni for operational research courses were made available to MSF missions and other non-governmental organisations (NGOs) in the region; the OCB Ebola OR agenda was coordinated by LuxOR and was communicated intersectionally; and several studies were initiated and completed on Ebola. This utilisation of in-house resources demonstrates the OR Unit's capacity for contributing to documentation of future epidemics and emergencies.

The Operational Centre Brussels (OCB) supported publication outputs reached a record-breaking 120 peer-reviewed journal articles, with diversification into 14 thematic areas. Sixteen percent of these included publication support to collaborating Ministries of health and NGO's. For the first time, we were also able to publish in dual languages (English and Russian) - *Public Health Action* (PHA) journal (<http://ingentaconnect.com/journals/browse/iatld/pha>) – October 2014 supplement). This crosses the English language barrier to dissemination of published evidence and paves the way for French and Spanish publications.

Although publications per-se are vital for enhancing dissemination of MSF work and supporting advocacy, the ultimate value of OR is its impact on policy and practice. Two early assessments showed that 74% of OR studies had a direct impact on program implementation. In addition, 62% of participants of OR courses continued with research activities after course completion (cf. publication no 12, Annex).

A firm position to promote the principle of open access for scientific publications is reflected in an advocacy article led by the OR unit but with wide stake-holder involvement (cf. publication no 5, 7, Annex).

We have practiced what we preached with 75 % of all OCB articles published in open access journals in 2014.

OR courses supported by Luxembourg Operational Research Unit (LuxOR) under a global partnership umbrella termed SORT-IT (Structured OR Training- Initiative) were scaled-up to 70 low-and middle-income countries in 2014. MSF's role as a catalyst resulted in more relevant OR being conducted, better implementation of health interventions and ultimately, more lives saved. These courses benefit from the Tropical-Education network for continuing education which can lead to obtaining a Master of Public Health (MPH) or PhD from European universities.

As regards dissemination, since 2010, the *MSF Field Research* website (www.fieldresearch.msf.org) has had 430,000 publications (close to half a million) downloaded from around the world. There are three take-home messages: the world is very interested in OR work done by MSF; we cover a gap area in terms of knowledge that people actively seek, and; dissemination enhances MSF's image and professional credibility.

The activities of 2014 were capped with a workshop on OR at the European Parliament highlighting the role and relevance of OR (an area that remains neglected both in terms of recognition and funding in the European Union (EU) and bringing it to the attention of politicians in Europe.

2. PROGRAMME ACTIVITIES

There are two units responsible for OR in OCB: the South African Medical Unit (SAMU) which is primarily responsible for research related to HIV and tuberculosis (TB), and LuxOR for other operational areas and capacity building in OR. SAMU activities are covered under the section on TB/HIV.

2.1. EBOLA RELATED OR ACTIVITIES

The OR unit supported the emergency pool in a number of areas which included: field support to Guinea, Liberia, Sierra Leone and the Democratic Republic of Congo; helping the human resources department to cover gaps in field epidemiologists through SORT-IT alumni; coordination of the MSF OCB OR

agenda; communication on OR with the other sections; data support; support for scientific presentations at various forums and; publication of journal articles on Ebola. This unprecedented utilization of in-house OR capacity is encouraging for similar opportunities in future epidemics and emergencies.

2.2 ADVOCACY AND INTERNATIONAL RECOGNITION OF OR

Despite the relevance of OR in bridging the gap between what we know from research and what we do with that knowledge - the so called 'know-do' or 'implementation gap' - there is currently no mechanism within the EU for funding OR or to support capacity building. Academic institutions continue to monopolize funding opportunities and OR continues to be considered the poor cousin of clinical trials and other forms of upstream research. As a consequence, it is almost impossible to obtain dedicated funding for OR.

However, for the first time, the scientific advisory group to the European Parliament granted MSF and its partners the opportunity to address EU Parliamentarians on the importance of OR. The Union foundation this year has provided a five year funding (2015-2019) for all African and Asian OR courses.

In particular, we want the EU to ensure that their major initiatives place greater emphasis on OR. Part of the output of one course was an article published in the *Lancet* entitled "Calling on Europe to support OR in low-income and middle income countries (*Lancet Global Health*), 2014, 2(6):E308-E310). Media releases were made to disseminate the paper by MSF, The Union and the WHO, and this campaign continues.

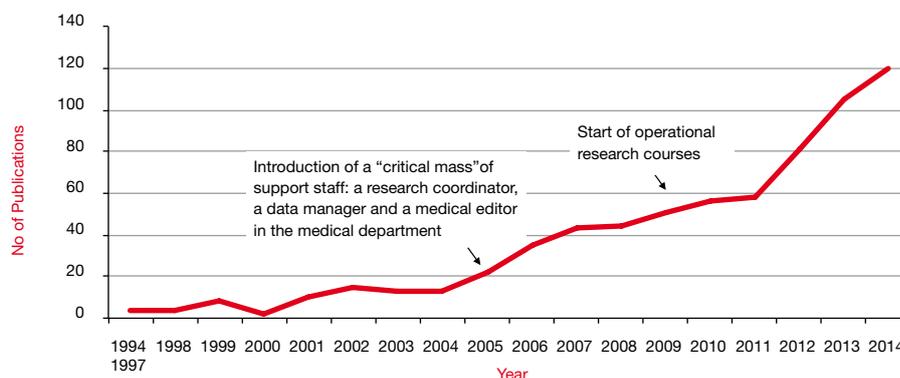
2.3. SCIENTIFIC PUBLICATIONS

The number of OCB-supported publications reached a record of 120 in 2014 (Figure 1). Sixteen percent of these included publication support to collaborating Ministries of health and NGO's. The introduction of a dedicated OR unit and the SORT-IT courses have propelled OR outputs. Eighty four percent (n=92) of these papers reflected original research, while 28 were viewpoints, review articles and state-of-the-art pieces (cf. § list of publications, Annex). The latter group challenged the status-quo of medical practice in different domains, and involved the use of publications as a tool for public debate and advocacy.

OCB publications covered 14 broad topics, representative of most medical activities (Figure 2). Areas remaining under-represented include health care in conflict settings, health care for torture victims, migrant health, mental health, health promotion and infection control.

As in previous years, CDs of publications were distributed to missions, partners and

Figure 1: Trend in OCB-related publications by year until 2014



donors, while hardcopy booklets were discontinued. A full list of OCB publications for 2014 is provided in the Annex.

2.4. RESEARCH DISSEMINATION

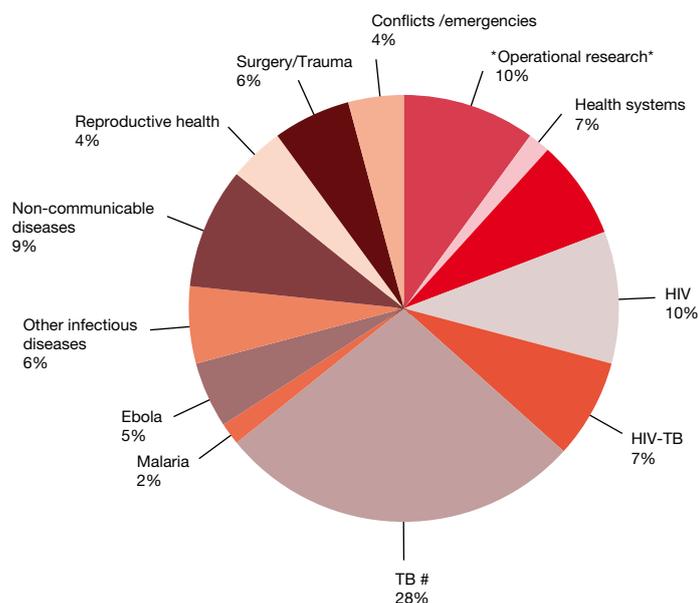
Dissemination was achieved through a number of channels including: peer-reviewed publications, the annual OR Day, conferences, the *MSF Field Research* website, the *OR Newsletter* and support for a dedicated journal dedicated that provides a home for OR - *Public Health Action* (<http://www.theunion.org/what-we-do/journals/pha>). A few of these are briefly described below.

We hosted the third OR Day in 2014, which now forms part of OCB's General Assembly. It was well attended and the medium serves as an excellent forum to promote and disseminate research and to enhance the credibility and value of OR within MSF. The four main themes were: i) Maternal and child

health, ii) HIV/AIDS, iii) Health care in conflicts and surgery, and iv) antibiotic resistance. The presentations are available online at <http://www.msf.lu/research/evenements/operational-research-day-2014.html> and through the *MSF Field Research* website.

The *MSF Field Research* website (www.fieldresearch.msf.org) continued to archive MSF-authored publications from over 100 journals and 35 publishing houses, and to make them available free-of-charge. Since 2010, there were 430,000 publications downloaded around the world (Figure 3). In 2014, the monthly downloads of 18,000 almost doubled those of 2013. Three take-home messages: the world is very interested in OR done by MSF; our work covers a gap area in terms of knowledge that people actively seek, and; dissemination enhances MSF's image and professional credibility. Negotiations with publication houses have en-

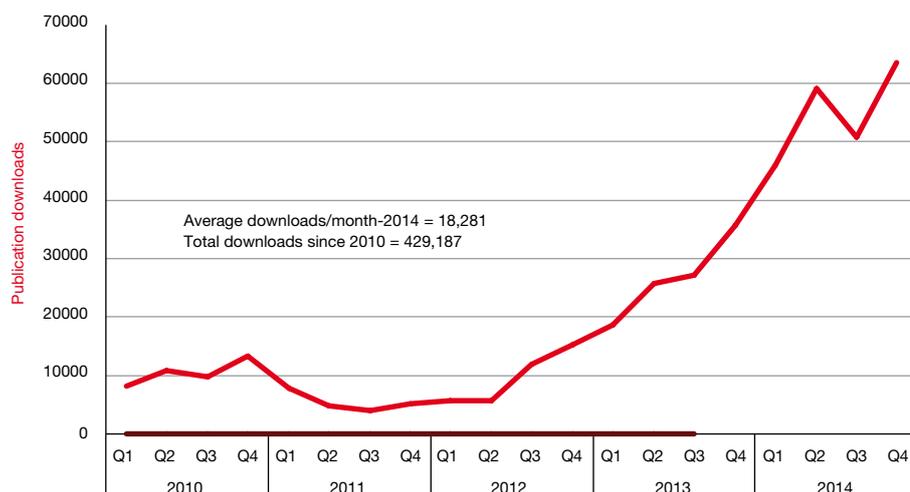
Figure 2: OCB-related diversity in publication themes in 2014 (n=120)



Most of the OR-related publications are viewpoints which essentially serve to improve the visibility of OR as a useful science for resource-limited settings.

A considerable proportion of TB papers come from SORT-IT courses (c.f. Publications)

Figure 3: MSF Publication downloads from the MSF Field Research website, by quarter - 2010-2014



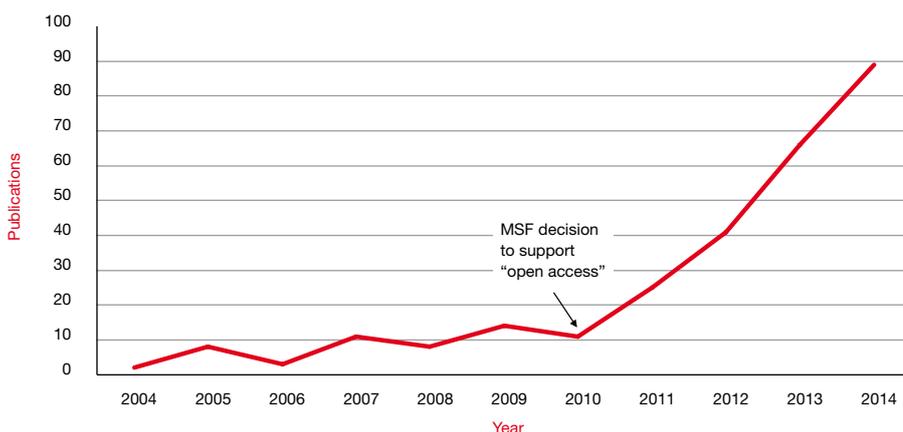
sured that MSF's papers are available "open access" on the website thereby improving access to those who may not have had any access due to financial barriers.

2.5. SUPPORTING OPEN ACCESS PUBLICATIONS IN OR

Open access journal publications aim to ensure that knowledge is widely disseminated and made freely accessible in a timely manner so that it can be used to improve people's health, particularly those in low- and middle-income countries. Anyone who has access to the internet can freely read, copy, print, download or link to those publications.

A firm position to promote the principle of open access within the publication industry is reflected in an advocacy article led by the OR unit (cf. publication 5, 7) and involving numerous institutions, including the WHO. We have practiced what we preached and in 2014, 75 % of all OCB publications were open access. The trend in open access publications over the last decade (2004-2014) is shown in Figure 4.

Figure 4: Trend in open access publications in the OCB (2004-2014)



The *Public Health Action* journal is an online, open access journal (<http://www.theunion.org/what-we-do/journals/pha>) that provides a communication platform for OR from low- and middle-income countries. It was established by The Union, and is supported by MSF and partners. In 2014, *PHA* ranked among the top 30 journals with the highest downloads on Ingenta (which hosts several thousand of journals). This was also the first journal which published OR in two languages (English and Russian - <http://ingentaconnect.com/content/iatld/pha/2014/00000004/a00202s2;jsessionid=wq2fltfash0.alexandra>). This paves the way for publications in French and Spanish – crossing the English language barrier in dissemination of published evidence.

2.6. RESEARCH IMPACT

Although publications are vital for enhancing dissemination of MSF's work and supporting advocacy, the ultimate value of OR is its impact on policy and practice. In this light, an early assessment of publications be-

tween 2009 and 2012, showed that 74% of OR studies had a direct impact on program implementation, adaptation of new monitoring tools and/or change in existing guidelines (cf publication No 11). A similar assessment involving participants of OR courses showed that over 60% continued with research activities after course completion and received strong institutional support (cf publication no 12). Such uptake of OR should improve accountability in field programs on "what works" and "what does not work" and challenge "business as usual" attitudes. It also shows that impact is being made not only at program level but among the people that are being trained.

It is important to strive to make this type of tracking of impact, a standard component of OR and research in general.

3. MEDICAL ACTIVITY REPORT

The sixth edition of the annual OCB Medical Activity Report (2014) was published with coordination and support provided by the OR unit. The report covers the 20 technical domains of the Medical Department. It was made available for the Medical Coordinator Days and General Assembly.

4. TRAINING/CAPACITY BUILDING (THE SORT-IT PROGRAM)

The MSF OR courses (launched in 2009 in partnership with The Union and partners) were formally recognized by WHO in 2013 and were scaled up to 70 countries through WHO support (including Europe, Asia, Africa, South Pacific and Latin America). MSF has played a strong catalyst role based on the premise that if more relevant OR is conducted, there will be better implementation of health interventions and consequently, more lives saved.

This is the first time an MSF course has been recognised by the WHO and it also allows participants to benefit from the Tropical-Education network for education in International Health (including Mph and PhD). Importantly, OR courses serve to increase OR capacity in priority areas where major gaps in medical data collection and documentation are identified.

Cumulatively, 269 participants from 70 countries have been enrolled in 23 SORT-IT courses. Of the 20 completed courses, attended by 236 participants, 190 (81%) completed all milestones. A total of 224 papers have been submitted to peer-reviewed

journals of which 197 (88%) were in press or published by the end of 2014. This course is unique in that it includes non-MSF participants, thereby fostering diversity of thinking and new ideas, all of which boost critical and scientific thinking. This is also of high added value for building partnerships, networking and advocacy. An independent evaluation of SORT-IT conducted by Technopolis for The Union in 2014, and including MSF and partners, highlighted the unique and added value of this initiative. (http://r4d.dfid.gov.uk/pdf/outputs/ORIE/60862-1953_150112_OR_Executive_summary.pdf).

5. OR FELLOWSHIPS

An OR fellowship program has existed since 2011 and the current pool of MSF fellows has increased to nine in 2014. A fellow's role is to strongly support development of "innovative approaches and ideas" within routine operations, support field implementation of OR and contribute to critical reflection on data, program orientation and the impact of MSF interventions over time. The longer-term vision of this fellowship is aimed at retention of medical human resources and the development of sustainable leadership of OR. How-

ever many institutional challenges remain (see section on challenges). Since 2011, the cumulative outputs of the nine fellows included 347 research projects with 188 published or in press, demonstrating their value in driving research in MSF.

Despite the considerable international recognition of the fellowship program (including by the WHO), and the outputs, this cadre is still not integrated within the MSF human resource grid. Formal recognition in MSF remains a challenge but efforts in this line will continue.

6. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- The recruitment of a program officer based in Brussels improved availability for meetings, interaction and visibility as well as direct interaction with operations. This proved to be of high value during the Ebola emergency.
- The high turnover of staff in the Operations Department continued to affect the sustainability of some research studies (due to the abrupt closure of some projects).
- Under the umbrella of SORT-IT, the output oriented OR courses continued to be very successful, with large numbers of candidates applying for each course and high rates of completion and publication success. These courses have also been key to diversifying the OR agenda beyond HIV and TB. SORT-IT research alumni and OR fellows were also involved in OR support in the Ebola crisis. Such unprecedented utilization of in-house OR resources clearly shows the potential for similar opportunities in future epidemics and emergencies. It is now important to i) ensure that the courses continue to be organised and coordinated in a way that does not compromise their quality, and ii) build up new facilitators to distribute the work load.
- Although there are several OR fellows now working in headquarters and in certain missions, a serious concern (that may negatively influence long- term retention and motivation) is that this cadre is still not formally recognized and included in the human resources salary grille. Other incentives need to be sought to sustain motivation for the additional workload.
- Epidemiologists are now considered to be of high added value in several MSF projects and by operations generally. However, within the human resources grid they are not recognised as offering specialised expertise and thus not appropriately remunerated compared to other cadres. This negatively affects recruitment. Management of epidemiologists in the OCB is also fragmented and needs to be improved.
- Despite a motion by OCB to increase OR in conflict setting, impetus in this domain has been compromised by security related challenges – mostly access issues. Other areas remaining under-represented include migrant health, mental health, health promotion and infection control.
- There was a shortage of funds for OR activities and courses during the year but this has been resolved with five year funding (2015-2019) received from The Union Foundation.

PROSPECTS FOR 2015

This will be along the lines outlined in the LuxOR vision document (2014-2016). In summary:

- Close liaison will be maintained with the Operations Departments so as to ensure that “OR feeds operations”. We will strive to foster the utilisation of OR as a science which searches for interventions, strategies, and tools that improve program performance and the care we offer in our missions. Project visits will be undertaken to understand program constraints and generate relevant OR questions.
- We will continue to actively diversify the OR portfolio (and widen it to include qualitative research) in line with the operational prospects and priorities. This will be achieved by: using regional epidemiologists, OR alumni and fellows to provide decentralized support to countries; using SORT-IT courses to rapidly build and sustain OR capacity in new domains; running SORT-IT courses on thematic areas (e.g. malaria, antibiotic resistance); moving SORT-IT to a second phase that includes qualitative research and; expanding SORT-IT to improve OR capacity in Francophone Africa.
- The successful structured approach to OR may need to be adapted over time, to fit the evolving OCB and MSF needs.
- We will continue to conduct and publish OR and where possible assess its impact on policy and practice. Decentralized dissemination of OR findings will be enhanced by expanding the successful OCB OR Day to Asia and Africa.
- Where possible, we will collaborate with other MSF units and local and international partners to maximize synergies in OR, capacity building, advocacy and funding for MSF’s missions.
- We need to enhance greater cohesion and communication between LuXOR team members who are dispersed around the world.
- Career opportunities for MSF OR fellows will be discussed further and explored through links to universities to offer a PhD to specific candidates and the possibility of WHO fellowships.
- Finally, efforts continue to explore using the pre-existing MSF-Luxembourg Foundation to host the capacity building activities. This initiative has several possible advantages. First, the activities of capacity building in OR could be embedded in a more sustainable framework. Second, it allows the possibility of research scholarships, grants etc. Third, it promotes new scholarly activity with increased chances of funding and collaborative opportunities.

PAEDIATRIC CARE

1. OVERVIEW

Although paediatric care concerns children from birth through adolescence, children under five years of age (referred to as under-five's in this report) are most at risk of disease and death, and remain the primary target for intervention. As in previous years, OCB data show that malaria, lower respiratory tract infections (LRTI), diarrhoea and neonatal pathologies are the main causes of disease and death in children under five.

Neonates (children 0-28 days) accounted for 34% of under-five inpatient mortality in OCB projects in 2014. Despite the progress made over the past years, implementation of neonatal care remains a significant challenge in the field, regardless of the level of care. A capitalization report on the neonatal care experience in Kabezi, Burundi was written in 2014.

In November 2014, activities at the Gondoma Referral Center (GRC) in Sierra Leone were suspended due to the Ebola crisis, bringing to a standby the 5-year vision of a paediatrics hospital project in Bo Sierra Leone.

An increased focus on quality of paediatrics care is planned in several OCB projects in 2015.

2. PROGRAMME ACTIVITIES

2.1. UNDER-FIVE CARE

2.1.1. Under-five outpatient care

In 2014, 522,096 under-five outpatient consultations, excluding ambulatory therapeutic feeding centers (ATFC), were conducted in OCB projects across 15 countries, representing 38 % of all outpatient department (OPD) consultations.

Among the projects for which standardized data were available through the EpiTools, MINOS, and/or other systematic databases (cf. Health Informatics section), there were 481,225 under-five outpatient consultations. Standardized data were not received for the Emergency interventions or for projects in Bulgaria, Italy, Egypt and Haiti. Nearly one quarter (24%) of all under five outpatient consultations were in Guidan Roudji, Niger (including health post interventions during the malaria peak), a project which will be closing at the end of 2015. Other important contributors to the overall under five outpatient consultations were the outpatient consultations in Bangui camp-Central African Republic (CAR) (13%), Doro-South Sudan (11%), the health centers and mobile clinics in Masisi-Democratic Republic of Congo (DRC) (9%), Gogrial-South Sudan (7%), the OPD of Ahmad Shah Baba hospital in Kabul (6%), and the outpatient interventions

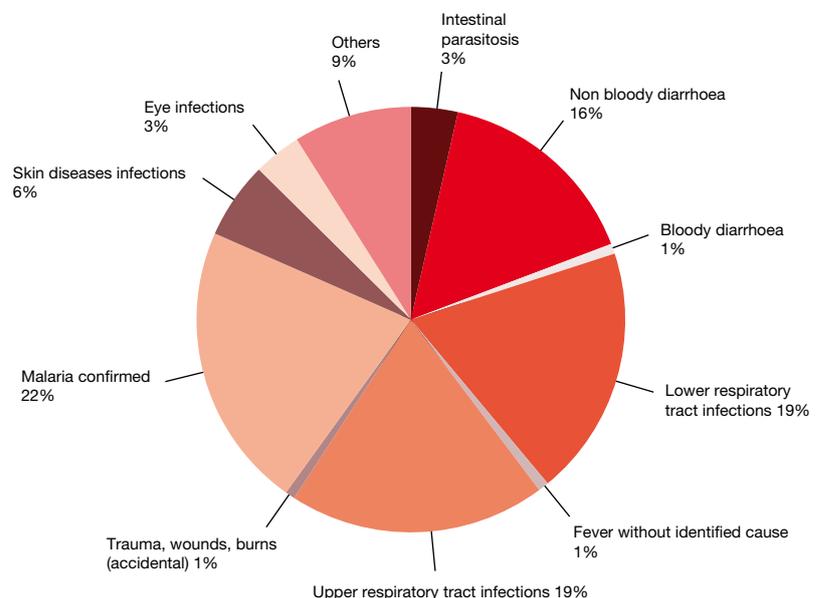
in Mauritania (5 % excluding the Ministry of Health (MOH)-run clinics, receiving minimal support from OCB).

The morbidity pattern for children under five was similar to that of previous years: respiratory tract infections represented 38 % of under-five morbidity (half of which were LRTI), followed by malaria (22%), non-bloody diarrhoea (16%), infectious skin diseases (6%), eye infections (3%) and intestinal parasitosis (3%) (Figure1).

Accurate differentiation between upper respiratory tract infections (URTI) and lower

respiratory tract infections (LRTI) is a challenge at OPD level. Moreover, only 70 cases of tuberculosis (suspected and confirmed) were reported at OPD level, where symptom-based TB screening questionnaires are still not routinely implemented. Given the high proportional morbidity due to respiratory tract infections, these warrant a specific focus. In South Sudan, the case definition for LRTI was fine tuned. Preventive interventions, in particular implementation of vaccination against Pneumococcal disease could also have a significant impact on reducing morbidity (and mortality) due to LRTI.

Figure 1: Disease profile in children < 5 in OCB OPD, 2014



2.1.2. Under-five inpatient care

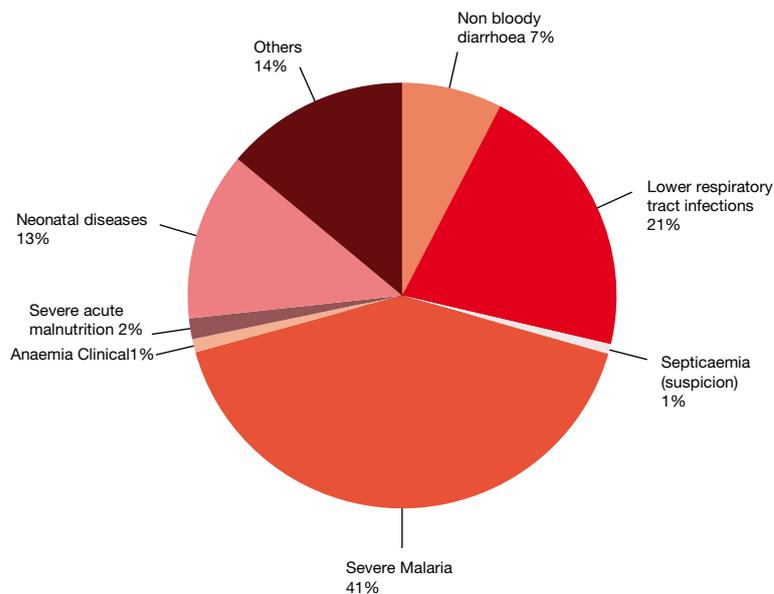
In 2014, 32,382 under five children were admitted to the inpatient services in 22 OCB projects in 12 countries, representing 58% of all admissions to the inpatient department (IPD).

Detailed data for the paediatric inpatient wards, excluding inpatient therapeutic feeding centres (ITFC), were aggregated for 17 projects using the Epitools or MINOS (cf. Health Informatics section). A total of 30,049 children under five exited from these projects. Two projects, Guidam Roundji in Niger and the GRC in Sierra Leone accounted for 42% of all under five exits. Data for severely malnourished children admitted to ITFC are reported elsewhere (cf. Nutrition section). Severe malaria (41%), LRTI (21%), neonatal diseases (13%), and non-bloody diarrhoea (7%) were the leading under five exit diagnoses from OCB hospitals (figure 2). Only 41 cases of tuberculosis cases were reported in the MINOS or Epitools databases. These very low numbers reflect the current lack of integration of tuberculosis in general paediatrics programmes and insufficient attention to diagnosis of paediatric tuberculosis. This gap was highlighted in reports from prior years.

The inpatient mortality rate for under-five exits from paediatric wards was 4.3% (3.3% if neonates were excluded), the lost to follow-up rate 1.1%, and the transfer rate 4.3%. The highest inpatient mortality rates for children 1 to 59 months (excluding neonates) were observed in GRC-Sierra Leone (8.4%) and Ouango-CAR (7.1%). Inpatient mortality rates were below 5 % for children 1-59 months in all other projects. In Sierra Leone, the high proportion of children presenting to the hospital at a very late stage of their illness likely contributed to the relatively higher mortality in this setting. Although overall outcomes for children 1 to 59 months were within established targets, there remains significant room for improving the quality of paediatric care in OCB projects.

The most important causes of under-five hospital mortality were severe malaria (34%), neonatal diseases (33%), LRTI (8%), suspected septicaemia (4%) and severe acute malnutrition (2%) (figure 3). Acute diarrhoea, meningitis and clinical anaemia each contributed 1 % to overall mortality. Case fatality rates for the top contributors to hospital mortality are reported in figure 4. The role of co-morbidity in mortality attributed to severe malaria warrants investigation as this could help improve

Figure 2: Main pathologies in children < 5 in OCB, IPD, 2014



treatment protocols. The contribution of sepsis/septicaemia and septic shock to overall mortality is likely underreported as these conditions are difficult to diagnose clinically and may be included in the diagnosis 'other'. Fluid Expansion as Supportive Therapy (FEAST) trial recommendations for children were implemented in OCB inpatient settings in 2014. Unfortunately, data are not collected in a way that allows assessing the impact of these recommendations. Generally, appropriate fluid management in children should receive a greater focus in OCB projects.

While improved laboratory capabilities (e.g., white blood cell count and differential, C-reactive protein, blood cultures) would be very helpful in specific settings, significant gaps remain in essential paediatric clinical

and nursing skills in many OCB projects. A greater focus on these essential skills should be the priority as this will have a considerable impact on mortality reduction and improvement in quality of care. Human resources with paediatric skills (paediatric nurses, paediatricians and generalists with good prior experience in managing children) can be of significant added value in projects with a large volume of under-five's. These profiles remain underutilized in many projects.

2.1.3. Paediatric care at GRC hospital, Sierra Leone

Due to the Ebola crisis, activities were suspended at the end of 2014 at the GRC, in Bo, Sierra Leone. The project's ambition to build a new hospital in Bo and scale up the

Figure 3: Main causes of mortality in children < 5 in OCB IPD, 2014

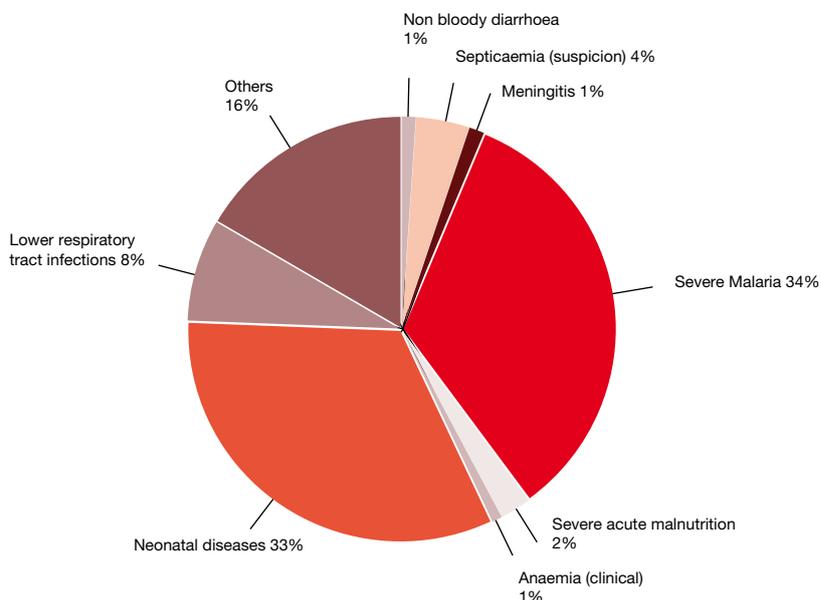
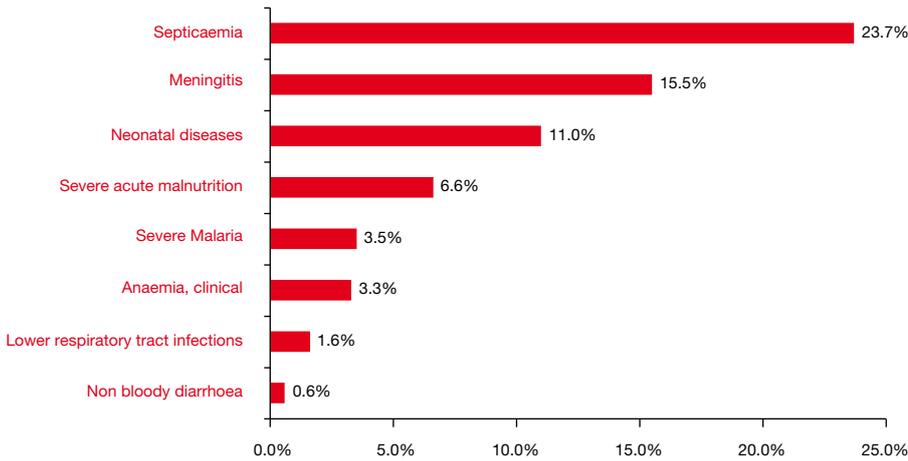


Figure 4: Case fatality rates for children < 5 in OCB IPD, 2014



quality of paediatric inpatient care and diagnostic capabilities in this Lassa-fever endemic context could therefore not be carried forward. The GRC experience highlighted several key areas influencing the quality of paediatric inpatient care: paediatric nursing care; emergency triage and emergency care; intensive care; hygiene and infection control; early identification of children whose clinical status is deteriorating through the use of tools such as paediatric early warning scores (PEWS); active involvement of National staff in quality improvement strategies; etc. As an operational choice, care for malnourished children was not fully integrated in this hospital project, a choice which warrants careful re-examination should activities re-open in the future.

2.2. NEONATAL CARE

2.2.1. Neonatal inpatient care

Data were analysed for the projects using the Epitools, MINOS, or the individual neonatal database (cf. Health Informatics section). 5 OCB structures used the individual database (Khost and Ahmad Shah Baba (ASB) in Afghanistan, Masisi, Timurgara, and GRC).

Neonatal disease accounted for 13% of under-five morbidities and 33% of under-five mortality in the IPD. The overall neonatal mortality decreased from 16.6% in 2013 to 11.0% in 2014. However, the inter-project variability was very wide (range 0% to 44%) and reporting problems contributed to the overall relatively low rate. Also, ASB- Afghanistan, a project which accounts for 23% of the volume of inpatient OCB neonatal activities, had a 1.1% inpatient mortality rate, thereby bringing down the overall average. In this project, critically ill neonates are referred to the nearby MoH hospital, the neonatal re-

ferred hospital for the entire country. Generally, inpatient neonatal mortality rates in MSF settings are considered 'good' if below 15% and 'acceptable' if below 20%. However, these targets also presume that projects report on outcomes for neonates who receive non-aggressive care (due to their birth weight and/or gestational age) or palliative care on neonatal or maternity wards.

The highest inpatient neonatal mortality rates were observed in Zongo-DRC (44%), Gogrial-South Sudan (36%), Bangassou-RCA (26%), and Guidan Roudji-Niger (22%). Significant improvements in the quality of neonatal care were nevertheless made in some projects (e.g. Masisi-RDC) as a result of commitment to this previously neglected patient population.

Among projects that implemented the individual database, 37% of deaths in the neonatal unit occurred within 24 hours of life, suggesting that a non-negligible proportion of deaths are related to intra-partum complications. Perinatal asphyxia was responsible for 20% of inpatient neonatal deaths, requiring further attention, as some of these deaths

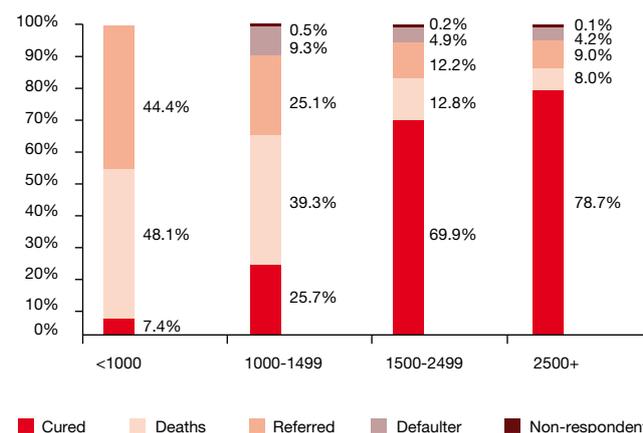
are preventable (e.g. through implementation of basic birth resuscitation). The other two major contributors to neonatal mortality were severe neonatal infections-including neonatal sepsis and meningitis-(36%), and other conditions linked to preterm birth/low birth weight (20%).

Stratification of outcomes by birth weight was possible by aggregating data from projects that implemented the individual neonatal database (figure 5). With the technology and means available within OCB structures, the highest impact on mortality is possible for neonates with a birth weight above 1500 grams, even if individual factors are important (e.g. gestational age). For children weighing less than 1500 grams, there was an overall high referral rate. Most referrals in this weight category nevertheless came from two projects ASB-Afghanistan (discussed above) and Khost-Afghanistan. In the latter maternity project, an intermediate level of neonatal care was implemented with referral after stabilization of very low birth weight and sick babies to the nearby regional referral hospital.

Neonates with a birth weight < 1000 g and those with a birth weight 1000-1499 g accounted for 1% and 6% of exits from inpatient neonatal services respectively, although these proportions may in reality be slightly higher as some underreporting occurred.

Among projects that implemented the individual neonatal database, 61% of the admitted neonates received BCG vaccination, 62% polio vaccination, and 15% hepatitis B vaccination. Missed opportunities for vaccination neonates remain, especially for the birth dose of hepatitis B vaccine, necessary to prevent mother to child transmission of hepatitis B. Sustained lobbying is necessary for this vaccine to become part of the routine EPI at country level.

Figure 5: Neonatal inpatient outcomes stratified by birth weight in OCB IPD, 2014



3. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

Neonatal care remains a significant challenge in the field, regardless of the level of care. Improving quality of care and outcomes is possible without high technology even if the impact on mortality is more limited among very low birth weight neonates (< 1500 g), and in particular, among extremely low birth weight neonates (<1000 g). Insufficient numbers of trained human resources and limitations in physical space remain the main constraint in the field. In specific contexts where the needs are greatest (i.e. very poor neonatal indicators and no other actors), this patient population would benefit from a broader vision and project strategy that considers neonatal mortality and morbidity reduction as a primary objective together with maternal mortality reduction. This would allow planning for trained human resources and sufficient physical space from the start of a project.

The capitalization report on the neonatal care experience in Kabezi-Burundi could assist other projects that are in the process of or planning to implement neonatal care. Alternative models of care adapted to the specific context should be documented.

The vision of a paediatric hospital in Sierra Leone could not be carried forward due to the external factors (Ebola crisis). Lessons learned from the Sierra Leone experience should nevertheless guide future paediatric hospital projects.

The Ebola crisis highlighted the fact that children have unique medical, social and psychological needs. Children require an adapted response, even in emergency situations.

PROSPECTS FOR 2015

- OCB Paediatrics Policy Paper.
- Reflection on a future paediatric hospital project in Sierra Leone and/or another location. With the suspension of activities in GRC –Sierra Leone at the end of 2014 and the anticipated handover of the Guidam Roumdji project in Niger in 2015, a significant decrease in IPD activities for under-five's is anticipated.
- Focus on quality of care in paediatrics. Several missions (e.g. DRC, South Sudan) have committed in their 2015 annual action plans to improve the quality of paediatric care. Support will be provided through the paediatrics mobile implementing officer and through inter-disciplinary work on paediatric quality of care indicators and tools.
- Neonatal care:
 - Opening of a new maternal-neonatal project in Lesotho with the implementation of an intermediate level neonatal care (stabilization unit model with referral).
 - Publication of a prospective study on 2 year post-discharge outcomes of low birth weight neonates admitted to the neonatal and Kangaroo Mother Care wards in CURGO-Burundi.
 - Further operational research on neonates, conditional on uptake at project level.
 - Dissemination and implementation of the newborn chapter in the 2015 MSF Essential Obstetric and Newborn Care Guideline and, in specific projects, of the OCB Advanced Neonatal Care clinical & therapeutic Guidelines.
- Implementation of TB contact tracing in a refugee camp setting in Mauritania. In parallel, paediatric TB diagnosis will be strengthened in this project.
- Piloting of integrated community case management for children 2-59 months in Pibor, South Sudan.
- Internal reports to describe challenges and lessons learned for paediatric care during the Ebola crisis and to assist the capitalization process for GRC-Sierra Leone.

PHARMACY

1. OVERVIEW

The continuing emergencies in Syria and Central African Republic (CAR), the emergency in Ukraine and increased MSF activity in countries with constraints for importing drugs and material - such as in Egypt, South Africa, Kenya, Ukraine, Pakistan, India, Lebanon and Syria (via Turkey) - continued to represent significant challenges to the medical supply chain. These challenges, compounded by the complexity of the global pharmaceutical market and the evolving regulations in developing countries, have made it necessary for MSF to tailor its supply chain to each context and also to interact more closely with the National Drug Regulatory Authorities (NDRA). Support to the medical and logistic teams on quality monitoring, rational medical procurement, and data quality continued improving in 2014.

The Good Distribution Practice (GDP) field support activity, which started in 2013, continued to be rolled out in 2014. This activity is part of the Supply Chain End-to-End approach which aims to follow the overall supply chain from the procurement centre (or from local purchases) until the end user. The aim of the GDP support activity is to avoid double standards in quality and to increase compliance with the World Health Organisation (WHO) and European Union (EU) GDP guidelines in the field (bearing in mind the challenges sometimes posed by the complex environments where most of our missions operate). To help to implement the GDP activity, the Pharmacy Unit recruited two new GDP pharmacists.

Within the framework of the Supply Chain End-to-End deployment phase, the main focus in 2014 was the intensification of the integration of medical stocks under the supply department.

The eight performance indicators for medical stocks were collected by almost all OCB missions.

Good Pharmacy Practice (GPP) is another growing topic in OCB. The GPP aim can be defined as: “contributing to health improvement” and “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. The Pharmacy Unit is currently working on the first edition of ‘Good Pharmacy Practice in end-user unit’ guidelines. This will provide structured and professional support for both enhancing patient-centred, safe and high quality pharmaceutical care for MSF beneficiaries, and promoting and ensuring rational drug use and safe medication practices. By preventing, detecting and resolving drug-related problems that can lead to drug-related morbidity and mortality, pharmaceutical services can make a unique contribution to the outcome of drug therapy and the quality of care.

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 standardised protocols of the Clinical Guideline, is updated according to new protocols, specific field needs, and the WHO Essential Medicines List (EML) (Table 1). Some key new inclusions and replacements in 2014 were:

Inclusion of several **paediatric formulations**: the long awaited heat-stable Lopinavir/ritonavir capsules for paediatric use, re-introduction of nevirapine oral suspension for

Prevention of Mother to Child Transmission (PMTCT), and several other oral solutions such as: morphine and chlorphenamine. A systematic review of all paediatric formulations was done and consequently some labels were corrected.

2.2. MSF CODIFICATION PROJECT

Currently, each of MSF's European Supply Centres (ESCs) develops article codes according to their own rules and stores them in separate systems. This frequently leads to difficulties in communication between sections, the field and headquarters. For several years the ESCs, the Operational Centres (OCs), and the International Technical Coordination (ITC) have been working on a project

to harmonise article codification rules, often called the Codification project, and create a common article database – UniData – that will standardise article information and speed up supply processes while preventing mistakes currently caused by miscommunication.

With the codification project some major changes in the codification of articles are currently ongoing, such as: adding new drug families, moving drug families to the correct group, defining and applying rules for creating codes and labels.

The UniData software - the first MSF-wide online supply article database harmonising information across the entire Movement with user-generated updates - is near comple-

Table 1: Number of new codes created for medical articles in the MSF list of essential medicines (2007-2014)

Type of articles	New codes created								Number of active medical codes in 2014	Number of codes de-activated in 2014
	2007	2008	2009	2010	2011	2012	2013	2014		
Drugs	115	137	106	41	75	52	49	158	652	51
Medical Supplies & Equipment	185	404	224	236	141	215	133	457	1,915	86
Total	300	541	330	277	305	267	182	615	2,567	137

tion. ESC and OC implementation teams are preparing for its roll-out across MSF, namely testing the software's linkages to downstream systems and cleaning the database of combined article codes and technical sheets. When ready, pilot implementation of this software will occur in the ESCs and OCs, with the implementation teams performing the final testing.

2.3. IDENTIFICATION AND VALIDATION OF DRUG SOURCES

Fourteen products were validated by MSF pharmacists in 2014 (Table 2). In addition, one exceptional validation was approved by the Medical Directors – sulfafoxine/pyrimethamine 500mg/25mg from Remedica (product registered in Cyprus but without Bioequivalence). Five exceptional validations were extended in 2014. 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.

2.4. ALERTS ON QUALITY AND THE AWAKENING VOICE OF LOCAL MARKETS

In 2014 two batch recalls and four quality alerts of medical items were issued by MSF-Supply concerning OCB projects (Table 3).

Evidence of problems was reported for products marketed in highly regulated countries and also in countries where products were purchased locally (mainly India and Kenya). With an increasing presence of mission pharmacists in OCB missions, the reporting of quality problems for internationally and locally procured medical items continued to increase. In 2014, 15 product quality-related problems were reported and investigated, of which four were procured locally (Table 4).

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

Table 2: Number of drug dossiers approved (2008-2014)

Validation route	Drug dossiers approved						
	2008	2009	2010	2011	2012	2013	2014
MSF full product assessment	28	15	25	20	15	11	14
WHO pre-qualification	61	28	35	35	48	62	53
Medical Director Waiver*	1	1	0	6	2	4	1

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

Table 3: Number of quality related communications issued by MSF Supply (2010-2014)

Quality related communications	Number of communications				
	2010	2011	2012	2013	2014
Quality alert	3	4	7	3	4
Batch recall	3	3	2	3	2
Total	6	7	9	6	6

Table 4: Quality related problems reported by 5 OCS (2013-2014)

Year	Total number of quality problems reported	International Procurement source	Local Procurement source
2013	27	20	7
2014	15	11	4

cycle, particularly in countries that lack post-marketing surveillance systems. This could be improved with a wider presence of pharmacists in MSF missions.

3. MEDICAL PROCUREMENT

3.1. ENFORCEMENT OF LEGISLATION INCREASES PROCUREMENT WORKLOADS

During 2014, evaluations of the local pharmaceutical markets were conducted in nine countries. In five of them (Turkey, DRC, Palestine, Kenya and Jordan), nine manufactur-

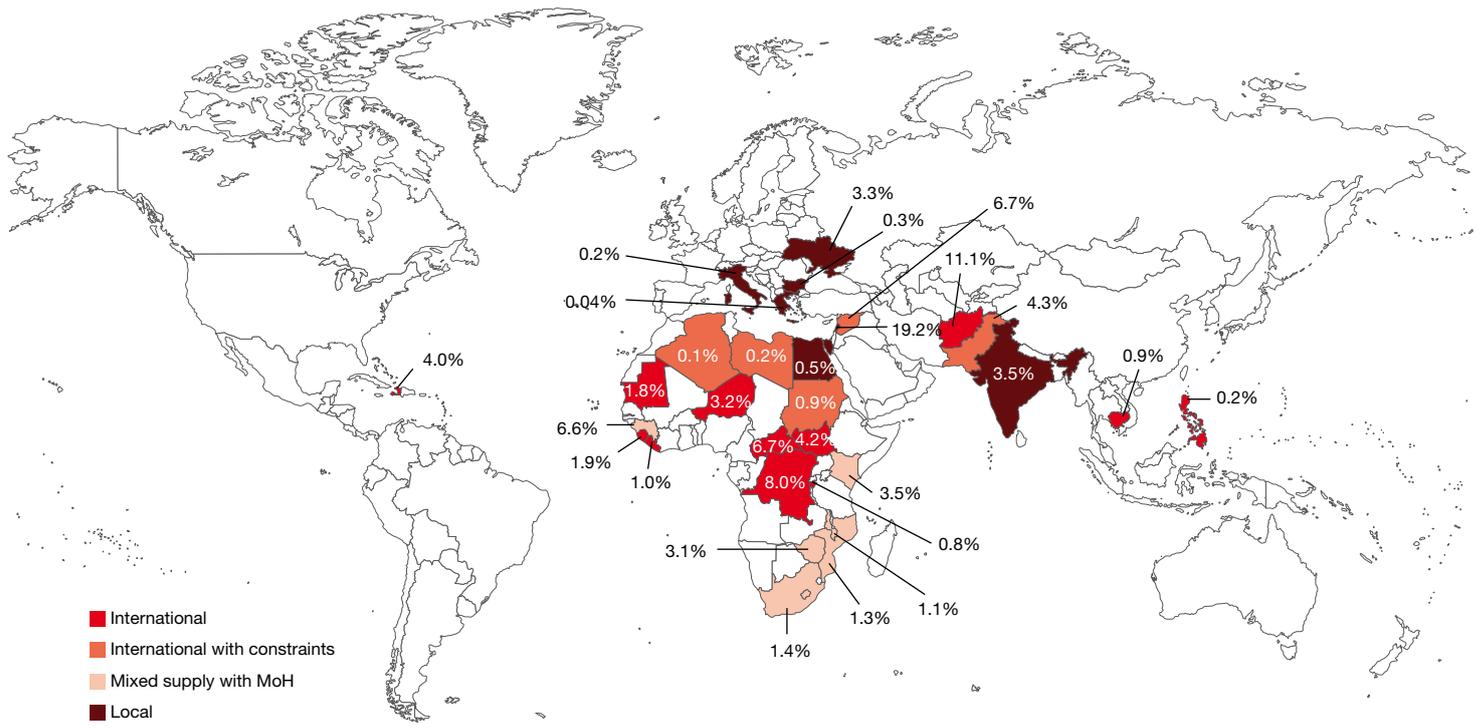
ers were approved, and in all nine countries (including the aforementioned countries, and Russia, Nigeria, Lebanon and Uganda) 55 wholesalers were approved (Table 5). On the other hand, one manufacturer and 22 wholesalers were not approved. These pharmaceutical market evaluations reflect the need for local medicine procurement in countries where MSF cannot import or faces importation constraints, rather than an overall improvement of the pharmaceutical market.

In 2014, 19 out of 31 missions dealt with challenging medical procurement systems:

Table 5: Evaluation of local pharmaceutical market (2010-2014)

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

Figure 1: Medicines procurement typologies in OCB missions



% indicates the amount spent per country on medicines procurement as a proportion of the total OCB expenditure in medicines
 Europe migrations: 0.01%

eight of these missions relied on the local market for their medical procurement, six received part of their medicines from the public distribution flow and the remaining five faced difficult importation regulations, leading to sporadic local purchases (Fig. 1). In countries 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 NDRA in medical humanitarian organisations such as MSF. Thus, there are 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 num-

ber of intersectional pharmacy positions (e.g. Pakistan, India, East Africa)

- 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 and to track the local regulatory environment through country pharmacists (cf. §3.3).

In 2014, 20 missions purchased medicines locally: four missions were in highly regulated countries (Bulgaria, European migrations, Greece and Italy), six missions (Lebanon, Egypt, India, Kenya, Pakistan and Ukraine) had a database implemented (listing the

medicines that have recommended manufacturers and from which a mission can make a purchase without needing to request HQ approval), five missions submitted validation forms to approve the local purchases (DRC, Haiti, Libya, Mozambique and Syria from Turkey) and five missions purchased locally without any recommendation regarding quality (Afghanistan, CAR, Philippines, South Africa - including Lesotho 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 Operation Procedure (SOP) – for Local Purchase and Donation was finalized in 2014 and sent to all missions.

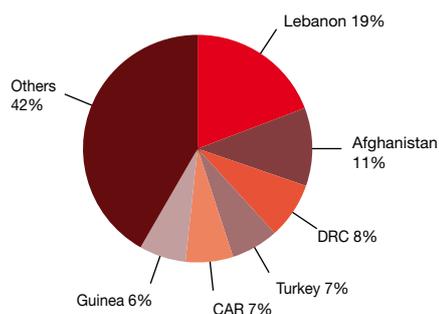
3.2. MSF EXPENDITURE

The total expenditure for OCB medical procurement (medicines, vaccines, small medi-

Table 6: OCB Total Medical Expenditures 2011- 2014

Medical items	OCB Total Medical Expenditure (M€)			
	2011	2012	2013	2014
Medicines	14.0	12.4	15.5	13.7
Vaccines	0.9	0.6	1.0	0.7
Small medical supplies	6.3	4.0	4.9	9.6
Medical equipment	2.3	2.7	2.3	2.4
Medical kits	1.9	2.4	1.8	2.2
Total	25.4	22.1	25.5	28.6

Figure 2: Top six missions in terms of medicine procurement expenditures in 2014



cal supplies, medical equipment and medical kits) in 2014 was 28.6 M€, of which 22.3 M€ were procured through MSF Supply. This amount represents approximately 3.1 M€ more than in 2013 (Table 6). An additional 0.7 M€ was spent on therapeutic food, mainly in South Sudan, Sierra Leone, CAR, Mauritania, DRC, Afghanistan and Niger.

Approximately 58% of the total expenditure on medicines lay with just six out of 31 missions (Figure 2): Lebanon and Turkey for the conflict in Syria, Afghanistan for the hospital projects, DRC remaining the third largest OCB operation, CAR for the conflict and Guinea for the ARV's programme and gap filling of the public distribution system.

OCB total medical expenditure for small medical supplies almost doubled compared to last year; Guinea (1.6 M€), Sierra Leone (1.3M€) and Liberia (1.4M€) accounted for approximately 45% of this total due to the Ebola intervention: mainly expenditure for Personal Protective Equipment.

11 items of the medical procurement list were responsible for 20 % of the total expenditure of MSF Supply medical turnover (23 M€) (Table 7). These 11 items include 5 times protective equipment (Ebola), 2 anti-retroviral drugs, 2 tests (HIV and malaria), one vaccine (measles) and therapeutic food.

3.3. COLLABORATION WITH THE NDRA

The development of pharmaceutical regulations in developing countries, while in principle positive, has generated importation constraints, with NDRAs enforcing regulations which previously did not apply to MSF. In addition, the NDRAs 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

Table 7: Top eleven items responsible for 20 % of the 23M€ MSF Supply medical turnover

Item	Expenditure (€)	% of total turnover (23M€)
Personal Protective Equipment (Ebola)	2,400,683	11%
OVERALL, PROTECTIVE (Tychem®), hooded, s.u., XL	942,475	
HOOD, CAPE, non-woven, s.u. (Ebola)	457,933	
OVERALL protec without hood (Microgard 2000TS+) XL, yellow	370,055	
OVERALL, PROTECTIVE (Tychem®), hooded, s.u. ,XXL	366,105	
OVERALL, PROTECTIVE (Tychem®), hooded, s.u., L	264,115	
TENOFOVIR 300 mg/ LAMIVUDINE 300 mg/ EFAVIRENZ 600 mg, tab	427,200	2%
LAMIVUD(3TC) 150mg/ ZIDOVUD(AZT) 300mg/ NEVIR(NVP) 200mg tab	371,446	2%
MALARIA HRP-2 TEST (SD Bioline), whole blood, 1 test 05FK50	332,965	1%
(BM) NucliSENS EasyQ HIV-1 v2.0 (1 test)	332,215	1%
VACCINE MEASLES, 1 dose, multidose vial (Serum I)	327,077	1%
READY TO USE THERAPEUTIC FOOD, paste, 500 kcal, 92 g sachet	298,325	1%

budget for quality control activities. As such, a lot of time and resources are devoted to counter-analyses by MSF while batches of medication are quarantined. 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 plans include medicine supply in their Memorandum of Understanding (MoU).

4. GOOD DISTRIBUTION PRACTICES (GDP)

The distribution of medicinal products is an important activity in the integrated supply chain management. Corrective Action Preventive Action (CAPA) Reports are a mechanism for correcting and recording defects and non-conformances.

In 2014, 12 such CAPA reports were opened and are currently under follow-up in the four missions visited by the GDP pharmacist. These missions will remain under close follow up until any identified deviations are resolved. Mapping of temperature was done in seven Medical stocks during the year 2014.

Specific support has been given to the Cambodia mission for the cold chain management of blood samples within the challenging Malaria survey campaign.

5. PHARMACY MANAGEMENT

With the development of tools and a feasibility study phase as pre-requirement to implementation of the integration policy, an important step forward was achieved in 2014. Crucial factors were the increase of knowledgeable Supply staff (Supply Chain Officers and Supply Polyvalent Technicians), the lessons learnt notably from the evaluation undertaken in Juba and Kabul Central Stocks, and the management of the integration policy in project mode.

Six new medical stocks were integrated this year as planned (Pool d'Urgence Congo PUC in DRC, Conakry ,Port-au-Prince, Emergency-Preparedness (EPREP) in Kenya, Kibera, Islamabad), which means that a total of 19 stocks have now been integrated in 13 different countries (Afghanistan, Burundi, DRC, Guinea, Haiti, Kenya, Lesotho, Pakistan, Sierra Leone, South Africa, South Sudan, Ukraine and Zimbabwe). Out of these 19 stocks, 17 remain active following the closure of the Kirundo project in Burundi and the cessation of the EPREP stock in Sierra Leone. As such, the coverage of integrated medical stock across OCB missions was 49% in 2014 (versus 32% in 2013)

The number of missions using standard stock management tools reached 100% in 2014 compared to 96% in 2013 and 89% in 2012. Isystock was utilized by 45% of the missions; Logistix by 35% and both tools by 20%. Although the trend is shifting from Isystock to Logistix with medical stock integration, Isystock remains the most used tool (59%). The development of Unifield, the new intersection supply software, was ongoing in

Table 8: An overview of the value of OCB medical stock and expired stock by the end of 2014

Number of Missions	Number of Stocks	Total Stock Value in EUR (1)	Incoming Value in EUR (2)	Expiries (3)		Non-Planned Donations (4)		Negative Inventory Discrepancies (5)	
		(year average value by stock)		Total Expired Value in €	Expired on IN value	Total NPD Value in €	NPD on IN value	Negative Inventory Discrepancies Value	Neg Inv Discr on IN value
23	44	25,342,734	25,027,566	869,643	3.47%	1,489,113	5.95%	442,462	1.77%

NB. Reported values came from Logistix and Isystock software for which we cannot ensure 100% price accuracy.

Figures not reported for the following missions: India, Lybia, Mozambique, North Sudan, RCA, Syria, Ukraine, second semester data of Sierra Leone and Lebanon

(1) Data missing on stock value for EPREP stock in Kenya mission

(2) For projects using a decentralized strategy, the sum of the value of the entries was used; for projects using a centralized strategy only the value of the entries for the central stock was used). Data missing on incoming value for EPREP stock in Beirut

(3) Data missing Expiry value for Bulengo project in DRC

(4) "Non-planned donations (NPD)" are quantities of products that cannot be used by the mission due to too short expiry dates or overstocks, hence have to be donated. This is considered as a loss. Data missing on NPD value for Egypt mission.

(5) Data missing on negative discrepancy value for PUC and Bulengo projects in DRC, Kenya mission and the central stock in South Sudan

2014 with the continuation of the pilot phase in Malawi. Additional tests were done and the software was finally validated ready for its deployment. Five deployment countries are planned for 2015 (Kenya, Haiti, Pakistan, Ivory Coast, South Sudan or DRC).

The full set of key performance indicators (KPIs) was collected for all OCB medical stocks at the coordination, project and hospital level. The purpose of these KPIs is to provide a global view on the total stock value, total expiries value, total non-planned donations value and total negative inventory discrepancies value by the end of 2014 (Table 8).

The proportion of expiries decreased slightly compared to 2013 (3.5% vs 3.8%). Losses on non-planned donation (6%) and negative inventory discrepancies value (1.8%) being new figures reported cannot be compared to 2013 and have to be appreciated independently. In 2014, fewer cold chain breakdowns were reported in the field (38% less than 2013) and during international transport (52% less than 2013) (Table 9).

During 2014, 24% of all reported cold chain breakdowns in the field (reported to Dr. Cold Chain) occurred in DRC and 50% in four of

the 13 missions (Afghanistan, Niger, RCA, India). An important increase in cold chain breakdowns was observed among the end-user units.

For the cold chain breakdowns that occurred during international transport (claims sent to MSF Supply), 67% of these claims were reported by five missions (DRC, Haiti, Malawi, Pakistan, Afghanistan) out of a total of 15 reporting missions

6. RATIONAL USE OF PHARMACEUTICALS

Around the world, the role of the pharmacist has expanded from that of a compounder and supplier of pharmaceutical products towards that of a provider of services and information, and ultimately that of enhancing the quality of patient care. Increasingly, the pharmacist's task is to ensure that a patient's drug therapy is appropriately indicated, the most effective available, the safest possible, and convenient for the patient. By taking direct responsibility for individual patient's medicine-related needs, pharmacists can make a unique contribution to the outcome of drug therapy and to the patient's quality of life.

However, in developing countries, pharmacists are under-utilised as members of the healthcare team, and this is also the case within MSF operations. As our projects in the field become more complex and more specialised, MSF pharmacists will need, and will be expected, to become more active and valuable members of the healthcare team.

To deliver pharmaceutical care in MSF projects, MSF pharmacists require a high level of knowledge, skills and the support of the organisation and structure from which this care is being provided.

Consequently, the Pharmacy Unit is currently working on the first edition of the 'Good Pharmacy Practice in end-user units' guidelines, in order to provide field pharmacists the basic structure and framework necessary to both enhance patient-centred, safe and high quality pharmaceutical care for MSF beneficiaries, and to promote and ensure rational drug use and safe medication practices.

A final draft of these guidelines is expected by the end of 2015.

7. HUMAN RESOURCES

7.1. PHARMACY UNIT

In July 2014, the pharmacy unit (which consists of the section pharmacist, the technical referent in medical stock management and the operational pharmacist) welcomed two new GDP pharmacists. The explicative brochure "Welcome To my Desk" with the list of respective tasks distributed amongst the team was updated and disseminated to the field and HQ.

Table 9: Cold Chain Breakdowns overview (2013-2014)

	Field Cold Chain Breakdowns Report to Dr. Cold Chain		International Cold Chain Breakdowns Claims to MSF Supply	
	2013	2014	2013	2014*
Nb of breakdowns reported	100	62	94	45
Nb of reporting missions	17	13	17	15
Nb of items involved	612	424	NA	NA
Total value of items involved	617,988 €	709,694 €	1,108,539 €	249,791 €
Total value of losses	80,226 €	7,915 €	18,328 €	39 €
% of losses	13%	1.1%	1.65%	0.02%

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

7.2. PHARMACY MANAGEMENT POSITIONS

During 2014 there were a total of 62 full time pharmacy positions, of which 55 were qualified pharmacists. There was 100% coverage of pharmacist positions across all OCB missions in 2014 (Ebola emergency excluded).

7.3. TRAINING ON PHARMACY MANAGEMENT

The annual drug management courses continued to be run in 2014 (one day on pharmacy management in the BLOC/MHS, 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 OCB, Hospital Management Team Training, Supply Manager course, Intersectional Sup-

ply and Stock Management course). The target audience for the latter was reoriented towards the public under “medical operational line” and not under supply department, in order to avoid a mismatch between roles and responsibilities as happened in 2013. A new training on Warehouse Management aimed at warehouse managers & supervisors working in Supply was developed. However, due to lack of participants, it had to be cancelled and is re-scheduled for 2015.

8. LOOKING BACK AND AHEAD

LESSONS LEARNED FOR 2014

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 2014, but still needs to be strengthened. The Local Purchase & Donation SOP, and the Pharmacovigilance and Bioequivalence policies were finalized and implemented in 2014. The SOPs for proper stock management are not finalized yet.

The implementation of the integration is a continuous process that doesn't stop after the shift of responsibility from medical operational line to the supply department and requires close monitoring. Consequently, a chronogram of pending activities needs to be put on place and followed carefully before carrying out the evaluation phase.

HQ and field pharmacists can and should play an important role in reinforcing the rational use of medicines. The pharmaceutical product should be seen not as an end in itself- but rather as a means to an end.

PROSPECTS FOR 2015

The lobbying for better adapted paediatric drug formulations in MSF settings should continue in 2015. Medicines with only one approved source should continue to be addressed as well.

Various documents will be worked on or finalised in 2015: 1) Transport Policy: expected to be fully implemented at field level by 2016 with the support of GDP project; 2) intersectional checklist for reception control should be finalized in 2015; and 3) final draft of the Good Pharmacy Practice in end-user units is expected to be produced.

The GDP project plans to visit at least 5 missions in 2015 and to work on isolated pallets for in country transportation. This will be accompanied by research and development of specific GDP tools (temperature control, transport solution, cold chain, procedures and working instructions).

The current target of having 100% of medical stocks integrated by the end of 2015 will be reconsidered, as not all stocks can or should be integrated. Through developing a typology of “integratable” stocks, coverage rates can be calculated more accurately and fairly. Furthermore, sharing the results of the 2014 KPI's with the operational cell in order to explore the different operational contexts in more detail was recommended.

In 2015, the pool of supply HR will be managed within the supply team directly by the Supply Technical and Resources Coordinator. This, will allow to select and to match more suitable “supply profiles” according to the contexts. Furthermore, the Pharma Unit aims to further expand the focus of pharmacy practice and to empower the pharmacist's role in ensuring that the drug therapies that are being prescribed for patients in our projects are appropriately indicated, the most effective available, the safest possible, and convenient for the patient.

Pharmaceutical care cannot exist in isolation from other health care services. It must be provided in collaboration with patients, physicians, nurses and other health care providers. Expanding the focus of pharmacy practice from products and systems to ensuring the best drug therapy and patient safety will raise the pharmacist's level of responsibility, and will require continuing philosophical, organizational and functional changes.

SEXUAL AND REPRODUCTIVE HEALTH

1. OVERVIEW

Over the course of 2014, it was again it's the two projects in Afghanistan (Khost and Ahmad Shah Baba [ASB] hospital) that covered almost half of all deliveries in OCB. Khost increased its delivery volume with more than 3000 deliveries which is extraordinary in particular in view of its lack of human resources and space. Although Khost has become the training centre for midwives and obstetricians, the need for maintaining specific expertise and skills in complicated labour management is a challenge; as such dedicated projects no longer exist.

Conversely, the systematic roll-out of the intersectional Advanced Life Support in Obstetrics (ALSO) training managed to meet the training needs in the field.

As a result of the overall reduction in number of programmes (through closures/handovers), the number of projects offering SRH activities also saw a general decrease. Although certain SRH activities such as antenatal care (ANC), deliveries, postnatal care (PNC), family planning (FP), and sexual violence (SV) care increased, others such as Caesarean sections, fistula repairs, termination of pregnancy on request (TPR), management of sexually transmitted infections (STI), and prevention of mother-to-child transmission of HIV (PMTCT) saw a dramatic decrease.

2. PROGRAMME ACTIVITIES

2.1. ANTENATAL CARE

The number of projects offering ANC decreased in 2014, though the overall number of ANC consultations increased from 149,692 in 2013 to 159,363 in 2014 (table 1). Gogrial, South Sudan (18,640 ANCs); Masisi, DRC (17,164); and Matam, Guinea (16,220) accounted for a third of all ANC consultations. Two missions that were closed in 2014 did not report any data for 2014.

Offering adequate ANC coverage (four focused visits during pregnancy) remained challenging: women tended to present for ANC late in pregnancy, and mainly attended only one or two ANC consultations (reflected by the high ratio of first consultation/total consultation, table 1). In 11 (55%) of the projects offering ANC, >50% of the overall total ANC were first visits – this was much higher than last year, when this was reported in seven (28%) projects offering ANC. Sizeable

differences were observed between projects: emergency missions, where ongoing violence and tension render it difficult for women to attend all recommended visits, have high ratios (e.g. 72% for Kabul, Afghanistan), while missions which have become more stable tend to have lower ratios (e.g. Kibera, Kenya with 32% in 2014). Some projects (e.g. Matam, Guinea) reported only first consultations – mainly the PMTCT projects, which perform testing on first visit and may thus focus less on (reporting of) follow-up visits.

Kibera, Kenya is the first project which implemented successfully the human papillomavirus (HPV) screening by visual inspection among HIV positive women attending ANC. Other activities such as systematic testing and treating for malaria remained a challenge to implement in all countries, especially in the non-endemic countries

2.2. OBSTETRICS

A total of 22 projects conducted deliveries in 2014, all of which offered emergency obstetric care. Of these, 12 projects provided Caesarean sections and blood transfusion, according them the designation of Comprehensive Emergency Obstetric and Neonatal Care projects (CEmONC), while nine only provided Basic Emergency Obstetric and Neonatal Care (BEmONC) but had a referral system to a CEmONC.

An increase in deliveries was observed, from 52,525 in 2013 to 61,172 in 2014 (table 2). Similar to last year, the Afghanistan mission (Khost and ASB hospital) covered 29,838 or 48% of all deliveries in OCB. Khost even saw an increase of 3000 deliveries, which is very impressive in particular in the knowledge that this project lacks HR and bed capacity.

A total of 4,028 Caesarean sections were performed in 2014. This huge decline (33%) can be explained by the fact that the two

Table 1: OCB Antenatal Care Activities, 2008-2014

	2008	2009	2010	2011	2012	2013	2014
Number of projects offering ANC	41	33	29	27	24	27	21
Number of consultations (total)	243,131	318,242	247,068	258,132	169,672	149,692	159,363
Number of consultations (first visit)	105,981	99,457	117,489	113,149	79,889	79,152	83,557

ANC: antenatal care

Table 2: OCB Obstetrics Activities, 2008-2014

	2008	2009	2010	2011	2012	2013	2014
Number of projects doing deliveries	31	29	26	24	27	29	22
Number of deliveries	37,584	53,995	58,107	72,348	47,908	52,525	61,172
Number of projects with BEmONC	14	20	22	24	35	28	24
Number of projects with CEmONC	14	14	17	16	16	13	12
Number of caesarean sections	2,508	2,918	4,007	6,438	5,411	6,051	4,028

BEmONC: basic emergency obstetric and neonatal care; **CEmONC:** comprehensive emergency obstetric and neonatal care

projects focusing on complicated deliveries – GRC and Kabezi – with an expectedly high C-section rate were closed in 2013. Masisi, despite a mix of normal and complicated deliveries has a C-section rate of 31%. This seems rather high and needs attention. It is desirable to have another project focussed on complicated deliveries only, as this is essential to keep the expertise (complicated obstetrics other than in high income countries) in the house. A study of the long-term maternal health outcomes two years post C-sections was conducted post-closure in Kabezi, Burundi (cf. §4.).

2.3. POSTNATAL CARE

Twenty-one projects offered PNC in 2014, compared to 22 in 2013 (table 3). Despite this slight decrease, the overall total PNC consultations increased from 24,224 in 2013 to 26,203 in 2014. Nearly three quarters (72%) of the PNC consultations were conducted by only six projects: Masisi (DRC), Kabul (Afghanistan), Kibera (Kenya), Maban (South Sudan), Goma emergency (DRC), and Castor (CAR), all having more than 2000 PNC consultations, with Masisi far in the lead with over 6000.

It cannot be distinguished whether these numbers represent a single PNC visit per woman or multiple ones: projects such as in CAR provide mostly a single consultation, post discharge, whilst in Kibera there are at least two provided. This difference in quality

cannot be analysed, but will receive more attention in 2015.

2.4. FAMILY PLANNING

In 2014, 58,686 FP consultations were performed across 24 projects (table 4) – this may be an underestimate, as several projects did not report on this activity. 70% of FP was covered by only four projects (Khost and Kabul in Afghanistan, Kibera in Kenya, and Lesotho)

FP remains quite sensitive in some contexts: even in the Gitega project in Burundi, where FP is systematically offered to all fistula patients and was showing high coverage in previous years, coverage decreased to 71% – lacking consent from the partner and/or religion play a major role.

2.5. SEXUAL VIOLENCE

Care for survivors of SV was provided in 17 projects to a total of 2,875 survivors. Almost all of these (95%) were seen in only seven projects: Mbare (Zimbabwe), Masisi (DRC), Nasr City (Egypt), Kibera (Kenya), Castor & Bangui, Mpoko camp (CAR) and Martissant (Haiti), with Mbare by itself seeing nearly half of all cases (1,357). In 2014, the mental health and SV clinic in Cairo consulted an important proportion of SV survivors who were also victims of torture. Both the number of first consultations for SV and the number of follow up consultations increased in 2014.

However, the proportion of survivors receiving 3 psychological counselling decreased over the years, from 41% in 2012 to 14% in 2014. Of all survivors, 26% are male survivors – a high proportion not frequently seen in (MSF) sexual violence care services.

The study of the Masisi and Niangara SV project: “One size fits all? Standardised provision of care for survivors of sexual violence in conflict and post-conflict areas in the Democratic Republic of Congo” (Loko Roka et al., 2013) has been successful presented in different platforms and audiences. Another ongoing study on SV focuses on Mbare (Zimbabwe); these studies together highlight the challenges concerning the provision of a standardised SV care package in different settings and indicate the need for tailor-made SV care packages.

2.6. FISTULA REPAIR

Only one fistula campaign was organised over the course of 2014, in Gogrial, South Sudan. During the campaign, one expatriate midwife and one surgeon supported the field teams. A total of 45 patients were admitted to the “fistula village”, 25 of whom were new patients - 31 women underwent surgical fistula repair and 37 repairs were performed (five women underwent a second repair during the same intervention and the sixth had a re-intervention). A high closure rate at hospital discharge (87%) was achieved, despite the surprising observation that 39% of these

Table 3: OCB postnatal care activities, 2008-2014

	2008	2009	2010	2011	2012	2013	2014
Number of projects offering PNC	26	20	24	21	23	22	21
Number of consultations	17,631	29,625	21,489	21,680	18,985	24,224	26,203

PNC: postnatal care

Table 4: OCB Family Planning Activities, 2008-2014

	2008	2009	2010	2011	2012	2013	2014
Number of projects with family planning	33	36	25	27	27	28	24
Number of consultations (total)	85,701	159,724	64,363	53,635	47,662	54,320	58,686

women had undergone an intervention outside of South Sudan.

In addition to the campaign, the long-term holistic project in Gitega, Burundi, performed 259 surgical interventions in 2014, representing a huge decline in cases since 2013 (385 interventions) despite its extensive recruitment activities. Maybe due to its successes in four successive years, the total volume (backlog) of fistula cases decreased drastically. The project is going to close down in the third trimester of 2015. This means the end of any continuous fistula repair project within the whole MSF movement.

In 2014, the toolkit “Fistula Care” was developed. This pocket guide has been developed to provide a practical approach for implementing a fistula care programme.

2.7. SAFE ABORTION

Termination of pregnancy on request (TPR) was provided in 10 projects, either within the MSF structure (5) or through referral to a partner organisation (5). Across these projects, only 222 TPR were conducted, this is a decline of more than half compared to the 553 performed in 2013. Nagaland, India provided most TPRs (29) in house, whilst Kibera, Kenya refers all (95) to Marie Stopes International. Although there has been some under-reporting, it is evident that several missions need to place TPR higher on their agenda's. If context analysis and/or assessments are not performed, TPR will not be implemented, as demonstrated in previous years. Willingness of staff remains a challenge, despite the strong efforts made during the various SRH-related courses.

Unsafe abortions are responsible for a significant proportion of serious morbidity and mortality (estimated at 13% of global maternal mortality) for women in countries where access to safe abortion is limited. By providing comprehensive abortion care, the risks of maternal morbidity and mortality related to unsafe and incomplete abortions are reduced. The package of comprehensive abortion care includes TPR, post-abortion care, and family planning. OCB offered post-abortion care in a total of 23 projects, to 3,729 patients. Taking into account all existing BE-mONCs and CEmONCs, this should be considerably higher.

2.8. PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV

PMTCT was supported in 11 projects in seven countries: eight of these projects were within the vertical HIV/TB programmes (Matam, Guinea; Thyolo and Nsanje, Malawi; Kwazulu Natal and Khayelitsha, South Africa; and Buhera, Gutu and Nyanga, Zimbabwe), whilst the remaining three were integrated into projects providing general SRH and OPD services (Roma, Lesotho; Kibera, Kenya; and Masisi, DRC). In all projects apart from Masisi, MSF assisted the MoH national PMTCT programmes to provide quality PMTCT care. All countries implemented either option B (ART for all during PMTCT but with the option to stop if the CD4 count is above 500) or B+ (lifelong ART regardless of CD4 count) by the end of 2014. A total of 44,750 women were tested, meaning an uptake of 78%-100%. Positivity rates ranged from 4% in Guinea to 18% in Kwazulu Natal. The main reason for lower rates of testing was stock-out of test kits.

The perinatal HIV transmission rate and post-breastfeeding transmission rate ranged from 2 to 8% among 3,643 babies who were tested. Follow-up testing of infants after breastfeeding has finished remained an ongoing challenge. Greater operational emphasis will be placed on PMTCT counselling in 2015, to support retention and adherence; data reflecting this, including virological outcomes, will be monitored.

OCB has also been actively involved in developing a PMTCT training module; including an e-learning course that will be integrated into the international SRH training programme.

3. TRAINING AND HUMAN RESOURCES

- The international SRH course was organized two times this year, in Geneva (OCG) and Paris (OCP).
- A decentralized tailor-made SRH course was adapted from the international SRH course for all different OC's staff working in South Sudan.
- The Advanced Life Support in Obstetrics (ALSO) training was conducted only once in Denmark as a saturation within the midwives pool. However the decentralised ALSO training was conducted 10 times and highly appreciated. In the meantime the SRH and Gynaecologist advisor attended the ALSO instructor course and

obtained certificate of ALSO instructor.

- Staff from OCB participated in the specific TPR, post abortion and family planning care training organized by RAISE/Marie Stopes International in Nairobi, Kenya.
- OCB organised a training on “Care to Victims of Sexual Violence” for the International Organization for Migration (IOM) in Egypt.
- SRH modules were included in the Preparation for Primary Departure (PPD) course (twice), Management of Health Services (MHS) (three times), Basic Logistics (BLOC) course (twice), Hospital Management Training (HMTT) (twice) and Health Promotion course (once).

4. NEW DEVELOPMENTS AND INNOVATIONS

- A considerable number of SRH-related studies were conducted and/or published over the year, including:
 - A study on the long-term maternal health outcomes two years post C-section (mortality, complications, use of family planning, outcome of next child, etc.) in the target area of the closed Kabazi project in Burundi, in parallel with the study on long-term outcomes of premature low birth weight neonates (cf. Paediatric Care section, §3.1.). Both studies will be published in 2015.
 - A retrospective analysis of outcomes of eclampsia patients in Sierra Leone over the time period 2010 – 2014, finalised and presented in 2014.
 - The impact of appropriate versus inappropriate use of oxytocin for labour induction in Timurgara, a huge problem reported in Pakistan and Afghanistan; finalised in 2014 and to be published in 2015.
 - Two studies (one on fresh fistulas and one on the quality of life 3 and 6 months after intervention in fistula patients) have been finalised in 2014 and will be published in 2015.
 - A study on SV in Mbare (Zimbabwe), focusing on adolescent and adult survivors was prepared in 2014 and will be conducted over the course of 2015.
- Documents written and finalized included: Maternity Waiting Home (MWH) guidance paper (+additional tools to assist implementation), the French translation of the

- SRH in emergencies toolkit, and a guidance paper titled: “Ebola Treatment Centre (ETC): Pregnant & Lactating women”.
- Documents which were developed in 2014 and which are still ongoing included the revision of the ALSO addendum (updated to the final version of the reviewed Obstetrics guideline), and the “Fistula care” toolkit (a pocket guide providing a practical approach for implementing a fistula care programme).
- The revised SV database and automated indicator calculation was implemented, with strong support of the OR-team (DRC, Zimbabwe, Kenya and Egypt).
- The individual patient obstetric database was set up in Timurgara, Pakistan, for routine purposes and to manage the oxytocin misuse study, with support of the OR-team.
- Specific chapters in the updated neonatal care guideline were reviewed.
- Thanks to the support of the Midwife Mobile Implementation Officer (MIO), the new FP patient file was finalised.
- The Sexual Violence (SV) ITC kit was revised and adapted to new SV treatment protocol.

5. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- The rolling out of the decentralized tailor-made ALSO courses in MSF projects was an intersectional process, including sharing of trainers and provision of trainings for the different sections together. This course was highly appreciated in the field.
- With the closing down of the holistic fistula repair project in Gitega, Burundi in 2015, the capacity to train and maintain skilled staff will decrease considerably. It will need to be discussed thoroughly in 2015 whether OCB is prepared to lose the years of experience and acquired expertise, or wants to put efforts in maintaining this expertise in the house.
- The Ebola outbreak led to the cessation of FP services in a country as Sierra Leone that, prior to the Ebola epidemic, ranked as one of the countries with the highest maternal mortality, and suffers from an increasingly dysfunctional health care system without reliable access to emergency obstetric care (EmOC). This should alert MSF to face deterioration in maternal health.
- OCB handed over the Bo Ebola Treatment Centre (ETC) to OCA. Nevertheless, FP availability and importance remained on the agenda: OCA made a guidance paper on: “Family Planning - pregnancy avoidance for the Ebola Management Centre (EMC)”, a clear document with explanations, advice on implementation, and a resource package for FP options to avoid pregnancy during Ebola epidemic for both survivors and staff members at the EMC.

PROSPECTS FOR 2015

- 2015 is seen as a “consolidation year”. Quite some new tools have been developed and will require finalization and translation. No new tools are planned, but the TBA collaboration and Guidance paper that is pending will still be on the agenda.
- The SRH WG will request a maternal health slot in the 2015 UK London scientific day; OCB plans to submit several abstracts, and hopes to present the volume of SRH-related OR.
- In September 2015 the SVRI (Sexual Violence Research Initiative) conference will be held in Stellenbosch South Africa. OCB plans to submit the SV study of Liberia, DRC, as well preliminary outcomes from Zimbabwe.
- There will be two new projects; one in Rustenburg on SV and one in Lesotho on maternal and neonatal care.
- The MIOs priorities for 2015 are providing support to the Egypt, Pakistan, DRC, and Afghanistan mission.
- The SRH WG will be supported in the writing up of the TBA support/position paper, Maternity files, and revision of the obstetrics guideline and ITC dossier.

SURGICAL CARE ACTIVITIES

1. OVERVIEW

While surgical care is often viewed as a costly and technically demanding activity, its provision in low-cost district hospitals is cost-effective, and compares favourably with selected primary health interventions. In projects offering surgical care, OCB provides access to high quality surgery / anaesthesia management of patients. During 2014, and following the trend of the previous years, surgical care activities in OCB mainly consisted of lifesaving and essential surgery, requiring only low technology and based in district hospitals. In parallel, OCB provided high-level orthopaedic care in specific projects and specialized surgical care to women with obstetric fistula.

Surgical care activities were offered in projects by choice, to enhance insufficient local surgical capacity, and during classic emergency interventions after natural catastrophes (e.g. Philippines) and acute conflict / violent environments (e.g. Central African Republic – cf. Emergency Unit section). OCB also gave indirect support to surgical care activities through training, knowhow and supply.

2. PROGRAMME ACTIVITIES

2.1. SURGICAL ACTIVITIES AT COUNTRY AND PROJECT LEVEL

By the end of 2014, there were 12 OCB projects offering surgical care: over the course of the year, three projects conducting surgical care were opened or newly started, and four were closed (table 1, Annex). The three projects which started offering surgical care in 2014 were emergency interventions, all in Central African Republic. One project was stopped and put in stand-by due to the Ebola epidemic in Bo, Sierra Leone (SL). Similarly to the previous years, surgical activities varied per project, with some projects mainly offering emergency surgical care (e.g. Kabul, Afghanistan), some dedicated to obstetric surgery (e.g. Timurgara, Pakistan), and some dedicated to specific pathologies/conditions (e.g. trauma care in Tabarre, Haiti and Kunduz, Afghanistan; and fistula surgery in Gitega, Burundi). Below, only the projects with direct surgical activities are reported. Two projects in which management of surgery was done by another actor and where OCB only provided support to surgical care activities were excluded from the analysis (Mon, India; Nyabiondo, Democratic Republic of Congo [DRC]).

2.2. SURGICAL ACTIVITIES BY INDICATION

In the 15 OCB projects that offered direct surgical care over the course of 2014, 12,005 primary interventions (new cases) were seen, representing a considerable decrease of 15% compared to 2013 (n=14,199). This decrease can be explained by the closure of Bo maternity, SL, the closure of some general hospitals (e.g. Jabal-Akkrad, Syria) and the downscaling of other hospitals due to a foreseen handover (e.g. Gogrial, South Sudan). This decline was not compensated by the increase of activities in the trauma care projects in Tabarre and Kunduz.

By comparing the proportions of surgical indications of 2014 with those of 2013 (figure 1), it is clear that there is an increase in proportion of trauma (predominately accidental trauma), while obstetrical and other patholo-

gies show a decrease in caseload. While, violent trauma causes show a decrease of around 7% in absolute numbers, it showed a slight increase 1% in proportional share of all indications. Accidental trauma shows a slight increase of approximately 1% in absolute numbers and a significant increase of 5% in proportional share of all indications. Obstetrical interventions continued to decrease since 2011: approximately 25% in absolute numbers since 2013 (and about 40% when comparing with 2011), and approximately 4% in proportional share of all indications. Other pathologies show the same trends as obstetrical pathology, with a decrease in caseload (22% in absolute numbers), and in proportional share of indications (1%).

This proportion varied considerably depending on the type of project: projects such as Khost and Timurgara with a specific focus on maternal care received >75% obstetric

Figure 1: Indications for surgery, expressed in proportions, 2008-2014

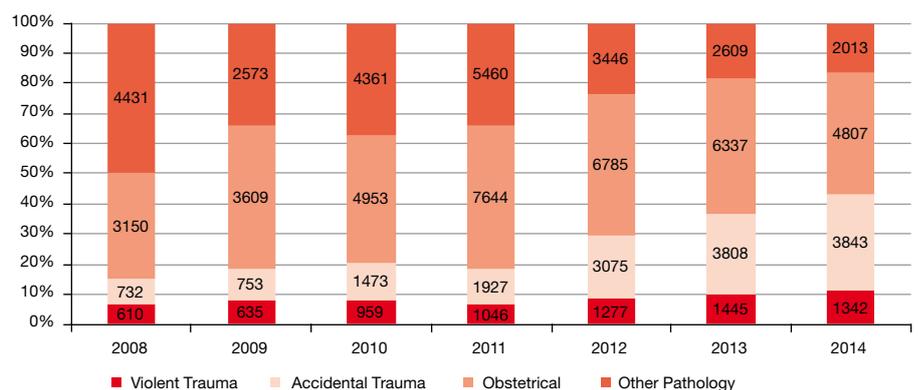


Figure 2: Types of anaesthesia, expressed as proportions, 2008-2014

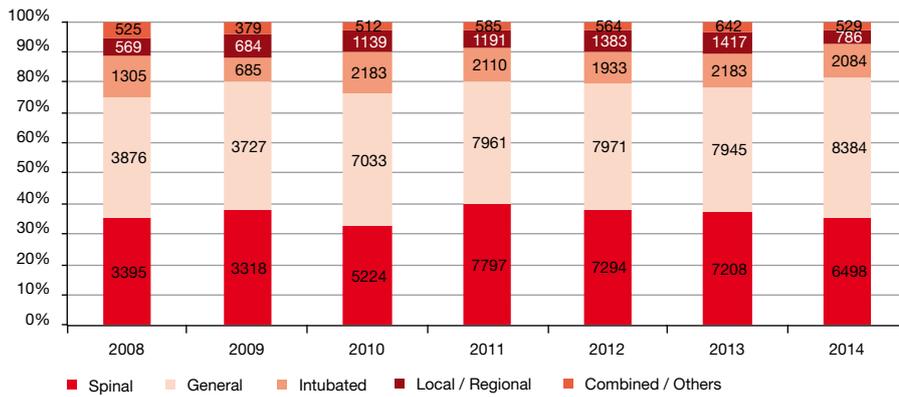
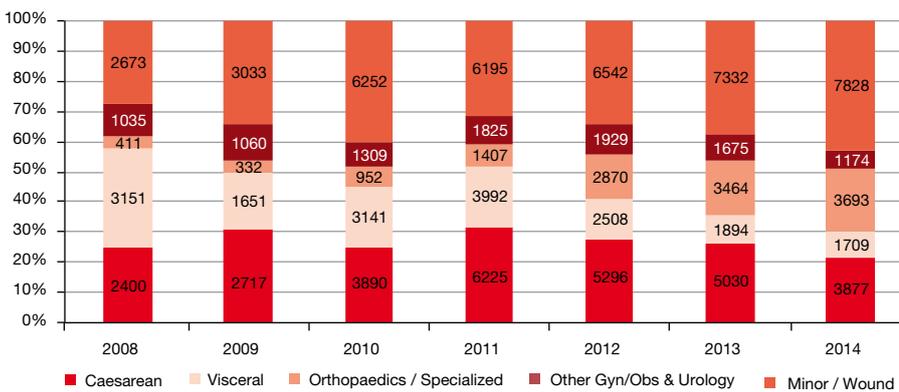


Figure 3: Surgical interventions, expressed in proportions, 2008-2014



causes, while for hospitals such as Kabul and Masisi, being general hospitals, the level of obstetric causes was between 50-75%. Information on such distributions can be useful in planning surgical activities in new projects, as it allows forecasting of the types of pathology to expect.

2.3. PERFORMED ANAESTHESIAS

During 2014, across the 15 projects with direct surgical activities, there were 18,281 anaesthesia interventions, showing a slight decrease of 6% from the previous year (n=19,395). The total number of anaesthesia interventions also translates to the total number of entrances to the operating department (OD): as some procedures were re-interventions, the number of anaesthesia interventions / entrances to the OD was higher than the number of primary interventions/new cases. The modest decrease in anaesthesia interventions combined with the important decrease in primary interventions is a consequence of the shift towards a higher number of trauma cases (cf. §2.2.), which typically require a higher number of re-interventions.

No major differences in the anaesthesia procedures were observed over time (figure 2). The quality of anaesthesia care is chal-

lenging to assess among projects, because the types of surgical intervention vary considerably; however, the proportion of spinal procedures for Caesarean sections (table 1, Annex) is a useful proxy quality indicator, as spinal anaesthesia is widely recognised as the procedure of choice for this intervention. A rate >75% is regarded as a good quality of anaesthesia provision- it is encouraging to know that 88% (average of spinal anaesthesia) was achieved during 2014. This excellent level is slightly higher than that of 2013 (85%).

2.4. SURGICAL PROCEDURES BY TYPE

OCB projects performing direct surgical activities reported 21,730 surgical procedures in 2014. This number exceeded the number entrances to the OD/performed anaesthesia interventions (cf. §2.3.), as multiple surgical procedures can be performed under the same anaesthesia procedure (in one 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, and in order to present a systematic and unbiased analysis, only the primary ("type I") procedures are thus reported on here (n=18,281, one procedure per entry into the OD). Caesarean sections decreased both in absolute numbers (25%) and proportionally (4%). Visceral surgery showed a decrease in absolute numbers (10%), while proportionally remained (9%) as 2013. On the other hand, orthopaedic / specialized surgery activities increased in both absolute numbers (6%) and proportion (2%). Minor /wound surgery also relative increased in absolute numbers (6%), and proportion (5%) (Figure 3).

2.5. OBSTETRIC FISTULA

Obstetric fistula is a complication of delivery that occurs in resource-poor countries where there is lack of comprehensive emergency obstetrical care, and particularly of timely Caesarean section. Many women suffering from fistula live in poverty: women with fistulas are stigmatised by the population due to the smell and leakages, and are often ostracised from the community.

During 2014, 263 patients (new cases) with obstetric fistula underwent a surgical repair – 243 women in the integrated fistula project in Gitega, Burundi, and 20 during the fistula campaign in Gogrial, South Sudan (the only fistula campaign conducted in 2014). However, more fistula repairs were performed during the year, as old cases (79 in Gitega, 21 in South Sudan) also underwent re-interventions – each year, the number of old cases increases in these projects. A full discussion of the pros and cons of the campaign versus the integrated approach is discussed elsewhere in this report (cf. Sexual and Reproductive Health section).

2.6. 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 morbidity) cases, as opposed to elective surgery. In MSF, certain planned procedures are considered essential and address conditions amenable to a proven surgical treatment, which by themselves may not affect the patient's health and/or life immediately, but which bring suffering and/or disability. Surgical activities can thus be classified in three degrees of urgency: urgent, delayed (together considered as emergent surgery), and planned elective. As urgent versus delayed surgery is a relatively subjective clas-

sification, emergent surgery as a whole is a more appropriate indicator across different projects.

For 2014, 17,558 emergent cases were reported, representing a proportion of 96%. This was a slight increase compared to 2013 (92%) – a general increasing trend has been observed over the past years. This may be due in part to the increase in orthopaedic interventions, which usually fall under urgent or delayed interventions. The ratio of emergent to planned elective cases is an important indicator for programmatic planning: knowing the type of surgery aids human resource planning (type and number of specialists) and influences the type of infrastructure, medical equipment and supply needed. Additionally, it can help guide operational strategies: e.g. if a surgical programme in a conflict area has many non-trauma and non-emergent cases, then it may be too distant from the active conflict.

2.7. ORDER OF THE INTERVENTION

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, etc.). Unplanned re-interventions can be a quality indicator, as they represent post-operative complications of the surgical procedure that can be linked to the professional performance (lack of experience or skills), lack of medical material and supply, unavailability of a post-operative recovery room, or lack of nursing follow-up of the patient in the hospitalisation ward.

In 2014, 65% of the interventions were primary interventions, 34% planned re-interventions, and 1% unplanned re-interventions. This represents an increase of planned re-interventions compared to 2013 (26%), again reflecting the performance of the trauma care centres, as these morbidities often require

multiple re-interventions during the treatment period.

2.8. INTRA-OPERATIVE MORTALITY

Out of the 18,281 entries into the OD in the 15 projects providing direct surgical activities, 44 intra-operative deaths were reported, representing an overall mortality rate of 0.2%, similar to the rate in 2013. 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 rates are reported per project in table 1 (Annex), data should not be compared across programmes: 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 provided in the project. 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 of the SAGE (Surgery/Orthopaedics, Anaesthesia/Reanimation, Gynaecology/Obstetrics, and Emergency/Intensive Care) unit. Specialist doctors such as surgeons and anaesthesiologists are scarce and those who are willing to operate in resource-limited settings even more so. The different training schemes targeted different types of GAS (Gynaecology/Anaesthesia/Surgery) specialists, taking into consideration their skills and knowledge, and the expected skills and knowledge in function of the operational strategies and needs. Trainings included:

- Training of expatriate surgeons in developing specific skills:
 - Trauma and orthopaedic surgery: in the MSF-OCB Hong Kong GAS week and in the MSF-OCA Germany Surgical Workshop (in Dusseldorf, Germany).
 - Obstetrical Fistula repair surgery: in Gitega (Burundi).

- Training of national medical doctors performing surgery in developing specific skills:

- Basic orthopaedic surgery: in the MSF-OCA Germany Surgical Workshop (in Dusseldorf, Germany), and through bedside training with expatriate general surgeons.
- General surgery: bedside training with expatriate general surgeons.
- Obstetrical surgery: bedside training with expatriate gynaeco-obstetricians.
- Management: in the MSF-OCB Hong Kong GAS week and in the OCB Hospital Management Team Training (HMTT).
- Training of nurses in anaesthesia management:
 - Hong Kong GAS week.
 - Bed side training with expatriate anaesthesiologists.
- Specific training cycles:
 - Sierra Leone, Bo: emergent obstetric surgery; in a joint project with CAPA care – a Norwegian NGO. This training is part of a surgical training for Community Health Officers who rotate in the project every six months. This was a response to the acute lack of health staff with surgical skills in the country.
 - Haiti, Tabarre: specialized orthopaedic care; in joint venture with the Haitian university. This training consists of rotations of national residents in orthopaedics.
 - Burundi, Gitega: specialized obstetric fistula surgical repair, for local surgeons

4. OPERATIONAL RESEARCH AND PRESENTATIONS

The SAGE unit published six peer-reviewed articles in scientific journals this year (cf. Operational Research & Documentation section). Four of them were directly linked to surgical care, and the rest to provision of Emergency Medicine.

5. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- Satisfactory follow-up of ongoing surgical care activities across all projects with good communication between field project, mission and headquarters.
- Good quality set-up of surgical care activities were assured in emergency and violent settings. During 2014 there were several interventions by default in challenging environments, and pre-requisites were put in place to perform quality surgical care.
- Improvement of orthopaedic care in the specific trauma centres.
- Implementation of a pilot project for non-surgical male circumcision in Nsanje, Malawi.
- Training of local and expatriate surgeons in Obstetric Fistula surgical repair.
- Good data (statistics) was achieved in surgical care: compliance with OT databases was high and a database on hospitalization was developed. The use of a unique and systematic File Number was widely used across different projects.
- Increase involvement of the medical department in decision making of medical activities in new projects, or required modifications on ongoing ones.
- Increased intersectional collaboration with both surgery and anaesthesia working groups.
- The MSF experience of providing surgical care was disseminated through several operational research studies published in 2014 and some other studies were initiated.
- Good positioning of MSF surgical care in different international forums.

PROSPECTS FOR 2015

- Provide good support to operational cell, mission and field projects level.
- Provide on-time support and fill the field gap to specialists upon request.
- Support other medical units by sharing guidelines and protocols: e.g. screening and prevention of cervical cancer, paediatric surgery, etc.
- Recruitment and/or training of specialists in managerial and teaching skills.
- Continue task sharing / shifting with local staff through trainings.
- Provide trainings for SAGE specialists: general surgeons in subspecialties (e.g. neuro-, thoracic and plastic surgery), anaesthesiologists (e.g. regional anaesthesia, peripherally inserted central catheter),
- Care of for specific patient conditions such as head trauma and polytrauma will be improved.
- Consistent and routine monitoring of activities (surgery /anaesthesia) will be maintained to ensure proper follow-up, good quality indicators and general improvement of OCB projects.
- Strengthen the response in case of mass disaster through good coordination between all the actors (emergency medicine doctors, anaesthetists, surgeons, orthopaedic surgeons, nurses, logisticians).
- Further Operational Research studies will be performed.
- Continue the good OCB and intersectional collaboration, as well as with other external platforms.

VACCINATION

1. OVERVIEW

The year 2014 saw moderate activity in the field of vaccination in OCB projects. The extension of the OCB Mobile Implementation Officer (MIO) position for another year allowed a new series of Missed Vaccinations Opportunities surveys, and support to implementation of integrated Expanded Programmes of Immunisation (EPI) activities in several projects.

There was a slight increase in the number of doses of vaccines supplied to the field in 2014 compared to 2013 (1,522,236 doses vs 1,454,579 doses), but there was a reduction of 10% of the vaccine doses administered. The total number of measles doses (599,701) administered during reactive vaccination campaigns in 2014 increased by 13% compared to 2013 (530,226) but remained about half of the doses administered in 2010 and 2011 (1,140,672 and 1,295,000 respectively).

In terms of innovations, a new approach to measles outbreak response (“coup de poing”) was tested in Democratic Republic of Congo (DRC) and showed promising results, and OCB collaborated in the development of a study protocol for heat stability of measles-containing vaccines.

2. PROGRAMME ACTIVITIES

About two thirds of the medical OCB projects reported vaccination activities in 2014. A total of 1,052,089 doses of vaccine were administered, which amounts to a 10% reduction compared to 2013 (1,169,232 doses). There was a slight change in the distribution of vaccination activities, as only 33% of the doses were given in routine vaccination (vs 38% in 2013). More than half (58%) of the doses were given in reactive mass vaccination campaigns (vs 45% in 2013). An estimated total of € 687,000 was spent on the supply of vaccines and vaccine products for all OCB missions in 2014. An overview of the doses administered over the course of 2014 is provided in table 1.

2.1. ROUTINE VACCINATION

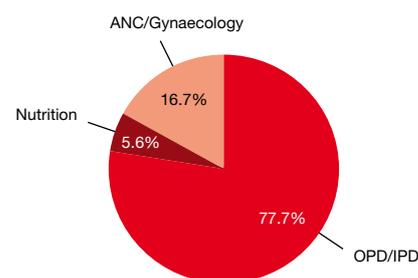
In general, reporting of routine vaccination has improved in OCB projects. In missions using MINOS, the extraction of routine vaccination data was made easy. Unfortunately,

most of the missions still use various data management systems, which complicate the compilation process.

A total of 350,668 routine vaccinations were administered in OCB projects over the course of 2014 (figure 1), representing a decrease of 22% compared to the 447,808 doses of 2013. More than three quarters of the doses were reported in Outpatient Department (OPD)/ and Inpatient Department (IPD), while 17% were reported in Antenatal Care (ANC)/ Gynaecology wards. Most of the children included in nutrition programmes were referred to OPD for vaccination. As a consequence, these vaccinations were reported in the OPD data instead of in the nutrition programmes. New vaccination performance indicators have been defined for nutrition programmes to alleviate this problem in the coming years.

There is still an outstanding lack of integration of routine vaccination in HIV projects. Following a small survey on vaccination in HIV projects, a briefing document was devel-

Figure 1: Distribution of routine vaccinations in OCB programs, 2014 (n=350,668)



oped and shared with the field. Hopefully, it will motivate missions to integrate more vaccinations in their People Living with HIV/AIDS (PLHWA) programmes in the coming year.

Overall, 292,117 (83%) out of the 350,668 routine vaccinations were administered to children younger than five years of age. In 2013, the lobby to include children above 12 months of age into the routine vaccination through catch-up campaigns had paid off, as 28% of the children <5 vaccinated were aged between 12 and 59 months. This proportion has unfortunately reduced to 20% in 2014.

The polio vaccine represented almost a third (32%) of the doses administered to children under five in routine vaccination in 2014 (figure 2), while Diphtheria, Tetanus, Pertussis, Hepatitis B and Haemophilus influenza B (HIB) vaccine (DTP-HepB-Hib) amounted to a quarter of the doses (25%). Measles con-

Table 1: Distribution of doses administered by type of activity, 2014

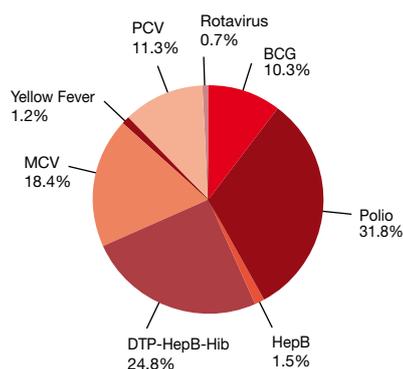
	Doses	%
Total doses routine vaccination	350,668	33%
Total doses in response to epidemics	613,581	58%
Total doses preventive campaigns	48,637	5%
Total doses post-exposure prophylaxis*	39,203	4%
Total doses administered	1,052,089	

*Immunoglobulin doses for tetanus and rabies are part of the post-exposure prophylaxis protocols

taining vaccines and BCG vaccines represented 18% and 10% respectively.

Notably, the PCV vaccine reached 11% of the doses given in routine, which is a big improvement compared to the previous years (3% in 2013). The implementation of PCV vaccination in routine programmes was effective in four countries (Afghanistan, DRC, Kenya and Mauritania) and was slowly introduced in Pakistan, Central African Republic (CAR), and Sierra Leone. Unfortunately, the prohibitive price of the vaccine slowed down the implementation of this vaccination in several projects. By the end of 2014, MSF received two donations of PCV10 and PCV13 vaccines from pharmaceutical companies to cover operational needs. This should boost the implementation of this vaccination in our projects in 2015. Plans to achieve that goal have already been developed in South Sudan and Zimbabwe.

Figure 2: Distribution of antigens administered to children under five in routine vaccination in OCB programmes, 2014 (n= 292,117)



Similarly to the previous years, the overall drop-out rates in the pentavalent and polio vaccines from the first to the third dose were high (26% and 31% respectively). It remains urgent to identify and address the reasons for these high losses to follow-up in all projects.

Vaccines administered to new-borns (oral polio vaccine 0 (OPV) and Hepatitis B at birth) represented 8% of the doses administered routinely. In 2014, 31% of the children born in MSF projects were reported to have received the Polio0 vaccination and only 5% received one dose of Hepatitis B vaccination at birth. Both these proportions are lower than in 2013. OCB must put all possible effort to improve these figures in the future.

In 2014, 67% of the 58,551 doses of tetanus vaccines delivered to women in reproductive age were administered to pregnant women. The proportion of women attending ANC clinics fully vaccinated against tetanus

Table 2: Post exposure prophylaxis: type of patients and in OCB projects, 2014

Type of victims	Vaccine	Doses	%
Wounded	Tetanus	35,415	90.3%
	Hepatitis B	2,383	6.1%
SGBV	Tetanus	1,328	3.4%
	Hepatitis B	2,383	6.1%
Suspected bites	Rabies	77	0.2%

remains difficult to measure. More than a quarter (28%) of the pregnant women who received the first dose of tetanus vaccine did not receive the second dose and three quarters did not complete the third dose required for long term protection.

2.2. POST-EXPOSURE PROPHYLAXIS

Over the year, 39,203 doses of vaccines were used for Post-Exposure Prophylaxis (PEP) in MSF OCB projects (table 2).

About half (46%) of the victims of sexual violence were reported to have received their first dose of Hepatitis B vaccination and the dropout between the first and the third dose was 64%. Alarming dropout rates of 96% were found in wounded patients receiving the first dose of tetanus vaccination and not

the second one. Similar dropout rates were found between the first and the last dose of rabies vaccination.

2.3. EVALUATION OF MISSED VACCINATION OPPORTUNITIES

New Missed Opportunity (MO) evaluations were conducted in South Sudan, DRC, Pakistan and Niger. In parallel, we developed a field guideline to easily organize these evaluations in the projects. For methodological reasons, results of the study performed in Pakistan were not reliable and are therefore not included in the table. Results of the other studies are presented in table 3.

The results of a meta-analysis of the MO performed between 2010 and 2013 were presented at the 2014 OCB Operational Re-

Table 3: Evaluations of missed vaccination opportunities in OCB projects, 2014

Country	Structure	Date	Target	n	Prevalence of MO	MO in eligible
South Sudan	PHHC Doro	May-June 2014	0-23 m	140	27%	57%
South Sudan	PHHC Doro	May-June 2014	24-59 m	26	27%	78%
South Sudan	PHCU Benemayu	May-June 2014	0-23 m	79	27%	84%
South Sudan	PHCU Benemayu	May-June 2014	24-59 m	31	16%	100%
South Sudan	PHCU Mayaka	May-June 2014	0-23 m	83	18%	50%
South Sudan	PHCU Mayaka	May-June 2014	24-59 m	37	14%	63%
South Sudan	PHCU Bellila	May-June 2014	0-23 m	100	11%	24%
South Sudan	PHCU Bellila	May-June 2014	24-59 m	20	5%	50%
South Sudan	OPD Bunj	May-June 2014	0-23 m	100	27%	47%
South Sudan	OPD Bunj	May-June 2014	24-59 m	20	15%	100%
South Sudan	PHCC Gogrial	May-June 2014	0-23 m	120	12%	17%
DRC	Masisi health centre	Oct-14	0-59 m	142	11%	67%
DRC	HGR Masisi	Oct-14	0-59 m	123	21%	53%
DRC	CSR Nyabiondo	Oct-14	0-59 m	179	21%	55%
Niger	CSI Guidam Roudmji	May-14	0-59 m	191	48%	93%
Niger	CRENI Guidam Roudmji	May-14	0-59 m	196	47%	90%
Niger	Sori Guidam Roudmji	May-14	0-59 m	196	41%	80%
Niger	Sae Saboa	May-14	0-59 m	199	27%	71%
Niger	GR Soloulou	May-14	0-59 m	80	73%	97%
Niger	GR Tibiri	May-14	0-59 m	199	22%	59%

Prevalence of MO: proportion of individuals exiting a health structure who have just missed an opportunity of being vaccinated; **MO 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); **PHCC:** Primary Health Care Center; **PHCU:** Primary Health Care Unit; **OPD:** Outpatient Department, **CSR:** Centre de Santé de Référence, **CSI:** Centre de Santé Intégré, **CRENI:** Centre de Récupération et Education Nutritionnelle Intensive.

search day under the title: “A Job Half Done: missed childhood vaccination opportunities within MSF health structures”.

2.4. MASS VACCINATION CAMPAIGNS

In 2014, OCB organized several preventive mass vaccination campaigns in DRC, CAR and Kenya. Out of the 48,637 doses of vaccine used for this purpose, 53% were meningococcal conjugate vaccine (MCV) and 43% were OPV. A new guidance document for preventive vaccination in emergencies was developed by the Vaccination Working Group early 2014 and shared with the missions. It is supposed to be tested for a few years before being revised. This document was included into the operational guidelines scenario of the PUC (Pool d'Urgence Congo). In parallel, a plan for multi-antigenic vaccination campaigns in difficult to reach populations was

developed for the population of Masisi, DRC.

For the first time, OCB gave support to a Human papillomavirus (HPV) vaccination campaign targeting grade four girls organized by the MoH in Khayelitsha, South Africa. This unique experience will be documented in order to allow other missions to benefit from it.

To respond to epidemics, OCB organized nine reactive mass vaccination campaigns in DRC (7), CAR (1), and Guinea (1). The overwhelming majority (98%) of the 613,581 doses were administered in outbreaks concerning measles. In 2013, a new response to a measles epidemic was tested in DRC, consisting of a rapid ring vaccination around detected cases to stop the spread of the epidemic (“Coup de poing” strategy). With the help of LuxOR, documentation of this creative approach was finalized in 2014 and results will be disseminated in 2015.

3. DEVELOPMENTS AND INNOVATIONS

A study on use of measles vaccines under Controlled Temperature Chain (CTC) supported by the Innovation Fund was conducted in DRC late 2014, with the collaboration of Epicentre. After field temperature exposure, the vaccines were sent back to the producer in India for testing. Results are expected in 2015.

4. TRAINING

As previous years, OCB gave support to two international trainings (Populations in Precarious Situations (PSP) in English and the Nutrition/Vaccination course 2 in French). Vaccination modules were given during the Health promotion training in the Management of Health Services (MHS) course.

5. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- The vaccination material available to the field was revised and updated.
- A new international guidance document for preventive vaccination in emergencies was finalised in January 2014 and distributed to all missions.
- A workshop on routine vaccination was organized and conducted in DRC. Representatives of all MSF sections participated in the meeting and a shared plan was developed. Unfortunately, the extended gap in the country focal point position in DRC supposed to be filled by OCB hindered a good follow-up of the achievements of the workshop.
- Vaccine importation problems continued in South Sudan and jeopardized the planned vaccination activities.
- Field guidelines for evaluations of Missed Vaccination Opportunities were developed in English at the end of 2014. They will be distributed to all missions once translated in French.
- Field visits of the MIO and sustained support to visited projects allowed to achieve good collaboration with all missions, which is promising for good results in the future.
- An international survey about the implementation of routine vaccination activities in nutritional programmes was launched at the end of 2014. Results should be available in the first quarter of 2015.

PROSPECTS FOR 2015

- Provide all needed support to organize and conduct good quality multi-antigenic campaigns in difficult to reach populations in DRC.
- Improve data collection and reporting on vaccination activities in all programmes, starting with nutrition.
- Increase the use of PCV in MSF OCB projects.
- Enhance the collaboration with HIV projects to improve attitude towards vaccination of PLHWA.
- Disseminate the results of the study on the “coup de poing” strategy at national and international level.
- Finalize the study on “measles vaccine under Controlled Temperature Chains” started in 2014, and develop preliminary results needed to plan the following steps.
- Follow the activities linked to leadership in routine vaccination in DRC.
- Compile the results of the Nutrition/Vaccination survey and share with the field.

WATER, HYGIENE AND SANITATION

1. OVERVIEW

In 2014, most of the effort of the Water, Hygiene and Sanitation (WHS) unit was devoted to support the MSF activities for the devastating Ebola outbreak in West Africa, with the presence of at least one member of the unit in the field throughout the outbreak. Other activities included the emergency response following typhoon Haiyan in the Philippines in early 2014. In the Balkans and Greece, the WHS unit was involved in supporting migrant's transit and detention centres. In Tabarre hospital, Haiti, we worked on water quality and improving the entire water network due to a *Pseudomonas* bacterial infection. In the Guidan Roudji district in Niger, where water scarcity is common as its supply is largely dependent on dysfunctional boreholes, MSF has collaborated in the diagnosis and regeneration of the existing boreholes, repairing and re-using them rather than discarding and rebuilding new ones. Implementing the WHS minimal requirements in the MSF state-of-the-art MSF hospitals was equally high on the operational agenda in order to prevent nosocomial infections.

The intersectional WHS working group continued to serve as an expedient platform for development and dissemination of tools and guidelines and for harmonizing intersectional WHS activities. This collaboration on the WHS approach was evident during the Ebola crisis and was successfully managed with regular teleconferences, and a large number of WHS activities tools were standardized and developed. All outputs of this intersectional collaboration were shared through Tukul. The Public Health Engineering guideline was translated in French.

The WHS unit is quite involved in MSF internal as well as external training. An exploration project on the interaction between environmental contamination and health was launched in the Democratic Republic of Congo (DRC). Additionally, a number of operational research and innovative initiatives were also launched over the course of the year.

2. PROGRAMME ACTIVITIES

2.1. ACTIVITIES AT A COUNTRY AND PROJECT LEVEL

Similar to 2013, OCB did not manage any vertical WHS projects due to its transversal or integrated nature, while almost all OCB projects included a WHS component. Systematic scanning for WHS needs was performed for all OCB projects – trained Water and Sanitation (WatSan) personnel from the pool were sent to the field if the WHS needs proved too complex or large for the field staff. In 2014, a focus was on providing WHS experts during the Ebola outbreak in West Africa. Simultaneously, WHS support was provided to established missions to ensure that the essential WHS requirements in the medical infrastructures where MSF operates was also respected, to minimise nosocomial transmission of diseases, and to optimise infection control. WHS needs in the large OCB emergency interventions were mainly addressed by specialised staff with techni-

cal support from headquarters. About 108 WHS experts supported projects in 12 missions (Philippines, Central African Republic (CAR), Niger, South Sudan, Sierra Leone, DRC, Libya, Afghanistan, Mauretania, Liberia, Guinea and Greece). In the year 2014, the five experts of the WHS unit spent a total of 300 days in the field providing direct support, with an average of 60 days each - this support was provided in Guinea, Liberia, Sierra Leone, Uganda, and Niger.

2.2. SPECIFIC WHS INTERVENTIONS AND FIELD VISITS

- Most of the effort of the WatSan unit in 2014 was devoted to support the MSF response to the Ebola outbreak in West Africa. This included support to the Training Unit on Ebola training sessions; production of videos on standard protocols, development of key tools and approaches (such as household disinfection kits); MSF representation at platforms of international organizations; and most importantly, the

significant effort required to ensure the continuous presence of at least one member of the WatSan unit in the field throughout the outbreak.

- An issue that needed attention was the scaling of sterilisation equipment and damage to the heating element by high water calcium levels in the MSF-supported hospitals in Libya. A water softener requiring minimal maintenance has been procured and is being tested in the Espace Bruno Corbe.
- In East Samar Island, the Philippines, an important innovative intervention of dengue vector control was introduced to mitigate the risk of a dengue outbreak following the typhoon in November, 2013.
- In CAR, the refugee situation required the support of experienced WatSan personnel to ensure that the basic WHS needs of the affected population were covered.
- In Bikenge, DRC, exploration took place in to investigate the possibility of opening a

project in a context of mining where there is an interaction between environmental contamination and health.

- In South Sudan, support to the handover of the water supply activities to other organizations and the malaria situation in Doro camp required a significant WatSan support.
- In the Balkans and Greece, support was provided to migrant transit and detention centres, and a focus was placed on the optimization of mobile consultations.
- In Haiti, improving water quality in Tabarre hospital was the main focus in order to manage a *Pseudomonas* bacterial infection in the borehole and the entire water network.
- In the Guidan Roudji district, Niger, water scarcity is common as its supply is largely dependent on often-dysfunctional boreholes. MSF has run an outpatient therapeutic feeding programme in the district for the past three years; the quality and quantity of village water supply are important determinants for the length of stay of outpatients. Borehole construction is expensive, time consuming, resource-demanding and not always successful. As an alternative, MSF has collaborated in the diagnosis and regeneration of existing boreholes with the Ministry of Health, Niger Water Bureau, and Idées-Eaux - a hydrogeological engineering consultancy firm. The aim of this innovative project was to improve access of safe drinking water and save costs and resources by repairing and re-using the existing boreholes rather than discarding and rebuilding new ones. This project will be presented during the UK Scientific Day in London in 2015.
- In Lebanon, Support was provided to a new Trauma Centre. Additionally, the demand of installation WHS infrastructures in “state-of-the-art” MSF hospitals was high on the operational agenda in 2014.

3. INTERNATIONAL COHERENCE

The intersectional working group on WHS has been active since 2007 to improve the intersectional coherence on WHS issues. Over the course of 2014, activities of the WHS working group included:

- Four meetings of the working group, with minutes and presentations disseminated through Tukul.

- Organisation of a technical day addressing resistance to insecticide, new tools and innovations, in collaboration with the Malaria working group.
- Organisation of a technical day on the use of GPS, mapping with google earth and Q-GIS which now became a standard intersectional training.
- An intersectional training on the regeneration of boreholes in Burkina Faso, with the participation of the ministry of natural resources
- Conference calls were organised to discuss the WHS approach during the Philippines emergency and the Ebola outbreak. A teleconference was organised between supply centres on selection process of long lasting insecticidal nets.
- Participation to working group leader meeting in Geneva.
- Participation in a workshop on Diarrhoea which was organized by OCG in Geneva and presentation of the household water treatment strategy in Chad.
- Systematic updates of the WHS working group space on Tukul, including technical documents, digital maps, presentations and meeting minutes.

4. DEVELOPMENTS AND INNOVATIONS

4.1. DOCUMENTS, GUIDELINES

The WHS unit, in close collaboration with the intersectional working group, was involved in the generation of a broad array of documents and guidelines (disseminated during 2014), including:

- The “Public Health Engineering in Precarious Situations”, was translated into French in 2014. It will be reviewed and presented for final editing to the intersectional guideline project in 2015.
- Several technical updates/files were implemented in the International Technical Coordination (ITC) catalogue in close collaboration with the international office, and a test was done in MSF Supply to verify the quality of some randomly selected kits in the MSF supply warehouse following complaints from the Philippines intervention.
- Feedback was provided to the manual on Hospital Waste Water Treatment, but more time will be needed to integrate the feed-

back of the Monrovia, Haiti and Pakistan experiences.

4.2. TOOLS AND STRATEGIES

The WHS unit, in close collaboration with the intersectional working group, was involved in the generation of a series of tools:

- The Bladder repair kit has been identified and integrated into the ITC catalogue.
- A pumping test-rota meter prototype that can be used to determine the pumping yield (e.g. of a borehole) is available for reproduction by all sections.
- A household water treatment kit and utilization guideline has been greenlighted and submitted for inclusion in the catalogue.
- Staff protective vector control measures from black fly in nodding disease foci were clarified.
- A water softener was identified and acquired, and its impact on scaling of sterilisation equipment will be tested in 2015.
- The cholera bed is available in the catalogue and field: headquarter feedback on prototype 4 was provided and is being incorporated further by the supplier.
- The dengue kit was used in the Pakistan and Philippines emergencies in 2014, and modifications based on field feedback were made.

4.3. OPERATIONAL RESEARCH

The close collaboration with the Operational Research Unit (LuxOR) enabled the WHS working group to generate a considerable number of operational research initiatives were launched over the course of 2014:

- A paper on “Spatial and Temporal Clustering of Typhoid Fever Identified Foci of Transmission During an Outbreak in Harare, Zimbabwe, 2012” was published in Plos One.
- A paper entitled “Can the detection of early epidemic risk factors, combined with a timely malaria vector control intervention, prevent the evolution and impact of malaria epidemics? A case study from Wajir district, Kenya” was published in Plos One.
- A first paper on “Typhoid Fever outbreak investigation to determine water and sanitation-related risk factors and high transmission zones during the 2011 outbreak in Kikwit, DRC” was -submitted for publication and a second paper is being developed.

- “Effect of refugee camp location on the capacity to meet humanitarian standards in the 2011/12 South Sudan refugee crisis” was submitted for publication.
- A paper to capitalise on operational implementation of an emergency response aiming at reducing the impact of Dengue fever on population in the Philippines is ready for submission.
- Funding is being obtained, a PhD student has been identified and a memorandum of understanding is being formalised between MSF and the London School for Hygiene and Tropical Medicine to improve the evidence base for WHS interventions in the next three major cholera outbreaks.
- A study comparing the Rotating Biological Contactor as packaged sewage and sludge plant (managed by OCB), the up flow sand filter clarifier (managed by OCA), a single septic tank (managed by OCP) and multiple septic tanks in line (managed by OCG) in health structures in Haiti is under development.
- A study on the impact of an integrated vector control intervention is being developed in the Doro refugee camps in South Sudan.
- A study on the feasibility, acceptability and impact of postnatal health facility distribution of water filters on diarrhoeal morbidity and mortality in infants (accepted by the MSF Innovation Fund) is awaiting identification of an appropriate operational context.
- A cross-sectional study to verify chemical water quality in MSF-supported medical infrastructures, in collaboration with SGS, a world leader in water quality analysis, is under development.

4.4. COMMUNICATION

MSF experience in WHS activities was actively shared at multiple platforms through scientific presentations and discussions, including:

- Participation to Malaria Policy Advisory Committee (MPAC – Geneva).
- Participation to the three days Roll Back malaria meeting in Geneva.
- Participation to the 1st Annual Pan-African Malaria Control Association Conference in Nairobi.
- Participate and teaching on the MENTOR course on Vector Control.
- Participation to the WHO meeting on infection control in Ebola context in Geneva.
- An interagency WASH meeting was initiated by MSF in Geneva on Ebola. MSF presented on strategy, anthropology, social mobilisation, and training.
- Written feedback and participation to advisory board meeting of the Humanitarian Innovation Fund in London.
- Participation as observer to WASH cluster meeting in Geneva.
- Presence of MSF in White House initiated workshop on Ebola Personal Protection Equipment (PPE) in Washington.

5. TRAINING & HUMAN RESOURCES

The WHS unit was involved in over 50 full-time days of dedicated trainings – including the WHS module of the Populations in Precarious Situations (PSP) training, the WHS in Emergencies training (English and French), the Response to Epidemics (REPEPI) course and the Water, Engineering and Development Centre course – as well as providing WHS 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).

An important effort was devoted to the Ebola trainings provided by OCB in EBC and support to the seven non-verbal movies that were developed also in EBC. WHS contributed to several MSF organised Ebola trainings in Brussels, Amsterdam, Geneva and Stockholm.

In addition, the WatSan unit also provided external training to an number of public health masters in international centres such as the Liverpool School of Public Health, the Institute for Tropical Medicine in Antwerp (2 complete new modules), the Sorbonne, Bioforce WASH & Bioforce Ebola, and the University of Johannesburg. The WHS unit also intervened during the Pharma week in Geneva.

6. LOOKING BACK AND AHEAD

LESSONS LEARNED IN 2014

- The intersectional working group continued to demonstrate its worth and has managed to harmonise the WHS activities of the different sections. The dedicated working group space on Tukul is a well-suited communication channel for the group, but information flow could benefit from further attention.
- An increasing number of operational research studies focusing on WHS have been launched. This serves to improve the international visibility of OCB WHS activities and will increasingly allow OCB to shape the WHS agenda of other actors in the field. A close collaboration with the Operational Research Unit has been forged in the process, to the mutual benefit of both units.
- The need for an intersectional Water, Hygiene and Sanitation Policy Paper is required and requested by the medical directors.

PROSPECTS FOR 2015

- The high level of technical support to the field on all WHS issues will be maintained, and the systematic scanning of WHS needs in projects, feeding into the Annual Review of Operations process, will continue. Particular attention will be devoted to the improved information flow between headquarters and the field, improved knowledge and skills both at headquarters and field level through intersectional WHS trainings, and further roll-out of innovative tools. Additionally, the unit will attempt to influence the WHS 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.).
- The dramatic events in South Sudan with other agencies responding very late and MSF taking in charge of 50 % of the water supply influenced the Operational Prospects document, leading to the consensus that MSF will take a much more proactive and leading role for the first 3 to 6 months of an intervention, and search for a feasible handover partner early on. This discussion needs to be further developed in 2015. For the period of these prospects, MSF has a clear ambition to increase its activities and role in the field of WatSan, primarily in emergencies, but possibly also in more stable contexts. Equally it had become clear that in order to maintain an HR pool with surge capacity, it is important to maintain WatSan positions in the field wherever required, thus we expect an increase of WatSan positions in the field.
- Perspectives concerning the intersectional working group work include: interacting on cross-cutting issues with other working groups (such as nutrition, HIV, tuberculosis, malaria, VHF, etc.); further positioning of the working group in a number of strategies; and a comparison of the WHS training trajectories to harmonise the process. Furthermore, a common WHS policy paper, endorsed by the medical and logistical directors, will be developed and its implementation will be monitored.
- The “Public Health Engineering in Precarious Situations” has been published in 2012 as MSF Public International MSF guideline and was translated into French by an external firm in 2014. This translation still needs to be reviewed by MSF staff in 2015.

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

OCB MEDICAL ACTIVITY

ANNEX OF TABLES

AND DATA

**MSF-OCB - BELGIUM - BRAZIL - DENMARK - HONG KONG - ITALY - LUXEMBOURG -
NORWAY - SOUTH AFRICA - SWEDEN**

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SECTION 10:

EVALUATION UNIT

TABLE 1: Findings and recommendations from OCB project evaluations carried out over the course of 2014

Summary of Recommendations	
South Africa	<ul style="list-style-type: none"> - Continue to pilot strategies aimed at improving the health situation in Khayelitsha and elsewhere whilst not forget about basics - The majority of respondents repeatedly stressed the necessity to develop (and retain) local medical expertise. - Due to its long-term presence, low staff turnover and the developmental character of its projects, it has developed a unique organizational expertise that should be documented and shared with other facilities. - It is of ultimate importance to adopt processes around institutional memory. - To make the Communication Policy (December 2013) even more efficient, there is need to create a more disciplined and focused communication approach.
Guinea	<ul style="list-style-type: none"> - MSF, in the future, does not engage as a leader in such operation without a second partner who could take over in an acceptable time. - MOHPH must take the ownership of the project before MSFs withdrawal in order to ensure the sustainability of the project achievements. - MOHPH/ES/NAC and NAPHP/STI HIV/AIDS shall provide the human and financial resources to conduct satisfactorily the implementation of the national strategic framework - Integration of AIDS and tuberculosis case management in the same facilities as «single window» must be a challenge for Guinea/ MOHPH.
Ukraine	<ul style="list-style-type: none"> - Cancelled
Philippines	<ul style="list-style-type: none"> - Cancelled
Zimbabwe	<ul style="list-style-type: none"> - Prioritize the formulation and implementation of the exit strategy and handover including the strengthening of relationships with partners. - Enforce activities to approach those with decision making power in decentralisation and document these efforts. - Upscale systematic advocacy (joint and bilateral meetings) with important donors and UN organizations on health and SGBV. - Consider allying with the network of HIV/AIDS organisations to get the 72-hour emergency message out using the already well-established HIV/AIDS network and communication flow. - Consider to allocate resources to conduct a survey to ensure a systematic inclusion of the perspective of the survivors in the capitalization of experiences.
Innovation	<ul style="list-style-type: none"> - Keeping in mind the lack of strategic commitment expressed by OCB toward the Innovation Project (IP), MSF Sweden needs to establish a strategic alignment with one or more OC for the purpose of developing the project further. - Considering past experience, MSF Sweden would need to support a process of internal integration or a greater synergy of IP within its existing structure. - Taking into consideration the expressed lack of understanding of the IP's vision, mission and the definition of the term "innovation," the team needs to develop a more concise and clear communication message. - Given the emphasis on seeing tangible outcomes from the IP cases, the team needs to re-consider its current methodology and shorten the time period between the problem-setting phase and delivering expected results.
KITSCH	<ul style="list-style-type: none"> - Further develop and improve the OOPS platform. - Improvement of Information management. - Further improve the Debriefing process. - Improve the monitoring of the briefing and debriefing process. - Safeguard on-going and future management and development of the new briefing and debriefing process. - Improve collaboration with Career Managers.
Ebola	<ul style="list-style-type: none"> - Carried over into 2015
Syria	<ul style="list-style-type: none"> - Carried over into 2015
Trauma Centres	<ul style="list-style-type: none"> - Carried over into 2015

SECTION 12:

HEALTH PROMOTION AND SOCIO-ANTHROPOLOGY

TABLE 1: OCB emergency interventions with HP activities, 2014

Country	Emergency in 2014	Type of HP activities
Guinea	Guéckédou-Ebola	<ul style="list-style-type: none"> - Promotion of MSF services - Health education on Ebola in the EMC, the community and in support of the outreach activities using different techniques - Continuous cultural assessment of the context - Continuous adaptation of core messages and tools - Support to Kissidougou area
	Conakry-Ebola	<ul style="list-style-type: none"> - Promotion of MSF services through testimony of survivors - Health Education on Ebola with a focus in the EMC, and then slowly extended to the community - Attempts to collaborate with other actors - Continuous cultural assessment of the context - Continuous adaptation of core messages and tools - Support to the opening of a new EMC
	Téléélé-Ebola	<ul style="list-style-type: none"> - Opening and closing of the project - Promotion of MSF services - Health education on Ebola in the EMC, the community and in support of the outreach activities using different techniques - Continuous cultural assessment of the context - Continuous adaptation of core messages and tools
	Macenta-Ebola	<ul style="list-style-type: none"> - Promotion of MSF services (Ebola transit centre and EMC in Géckédou) - Focus health education on Ebola in the community and focus on resistances in specific groups - Hand over to the French red cross with HP support to their teams
Liberia	Coordination	<ul style="list-style-type: none"> - Anthropologist position supporting different areas (stigmatisation, funerals and cremation, etc.)
	Elwa 3- Ebola	<ul style="list-style-type: none"> - Health education on Ebola in the EMC - HP support during the first assessment outside Monrovia (creation of a rapid response team)
	Outreach/HP-Ebola	<ul style="list-style-type: none"> - Promotion of MSF services - Large awareness campaign in close collaboration with the MoH, covering the whole of Monrovia as the target population - Continuous cultural assessment of the context - Continuous adaptation of core messages and tools
	Distribution-Ebola	<ul style="list-style-type: none"> - Support for the distribution of protection kits - Awareness session on the use of the different items in the protection kits - Creation of a specific video as a tool to explain the use of the kit
	Foya-Ebola	<ul style="list-style-type: none"> - Promotion of MSF services - Health education on Ebola in the EMC, the community and in support of the outreach activities using different techniques - Continuous cultural assessment of the context - Continuous adaptation of core messages and tools
Sierra Leone	Kailahun-Ebola	<ul style="list-style-type: none"> - Promotion of MSF services - Large awareness campaign in close collaboration with the communities and MoH covering 5-6 chiefdoms as the target population - Continuous cultural assessment of the context - Continuous adaptation of core messages and tools
	Bo-Ebola	<ul style="list-style-type: none"> - Health education on Ebola in the EMC only
Lebanon	Beirut	<ul style="list-style-type: none"> - HP support for refugees in Shatila (3 refugee camps): Hygiene promotion sessions in PHC, Health therapeutic education session for diabetes and epilepsy, mapping & community networking - HP support in the South: hygiene promotion, security risk analysis, support for crowd control, awareness session on mental health
Philippines	Typhoon	<ul style="list-style-type: none"> - Assessment on diarrhoea & water borne diseases - Dengue prevention strategy put in place and handed over to the MoH - KAP survey on health seeking behaviour for Dengue
Central African Republic	Bangui	<ul style="list-style-type: none"> - Promotion of MSF services - Social mapping of the two camps and a quick census report - Health surveillance in the camps: mortality, nutrition, etc. - Health education on all relevant medical topics (malaria, measles, SRH, nutrition, etc.) in the hospital, the health posts and the camps & the host community - Hand over to regular project
	Bangassou	<ul style="list-style-type: none"> - Analysis of the Bangassou population - Study on health practices & access to health for the Bangassou population - Health education activities in the hospital and in the community on malaria, hygiene, SRH and blood donation - Hand over to regular project

South Soudan	Juba	<ul style="list-style-type: none"> - Health surveillance (mortality, pregnancy, nutrition screening, etc.) and raising health awareness in the camps - Promotion of MSF services in the camps - Health education inside the health facilities on primary health care, water hygiene & sanitation, and all water borne diseases
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HP: health promotion, EMC: Ebola management centre; KAP: knowledge, attitudes and practices, MoH: ministry of health, SRH: sexual and reproductive health

TABLE 2: OCB projects with HP/anthropological activities, 2014

Country	Project	Key activities in 2013
Afghanistan	Helmand (OCA)	<ul style="list-style-type: none"> - Project under MSF Amsterdam, with support from the HP flying position - Health education on all relevant medical topics in the different services of the hospital and support to the mobile clinic. - Specific support on blood donation: development of a leaflet and a short movie.
	Kabul	<ul style="list-style-type: none"> - Health education on all relevant medical topics in the different services of the Ahmad Shah Baba Hospital (maternal health, nutrition, triage, blood donation, etc.) - Awareness raising on primary health care (including EPI) and preventive messages within the mobile clinics - Support different studies inside and the hospital and with the mobile clinics: knowledge on MSF, mortality & birth spacing in maternity, antibiotic resistance in OPD.
	Kunduz	<ul style="list-style-type: none"> - Health education on personal and environmental hygiene, physiotherapy, mental health - Development of adapted HP tools - Specific focus on blood donation and care takers rules
	Khost	<ul style="list-style-type: none"> - Health education on maternal and child health care with a special focus on breastfeeding, ANC, PNC and Kangaroo mother care
	Emergency in Khost refugee camp	<ul style="list-style-type: none"> - Promotion of MSF services - Health education on hygiene, clinic triage and flow, diarrhoea, ARI, etc. - Support for health surveillance in the camp - Support and organization of mobilization for the measles campaign
	Dasht-e-Barchi (DeB) (OCP)	<ul style="list-style-type: none"> - Project under MSF Paris, with support from the HP flying position - Starting up of HP activities (recruitment and training of the HP team) - Health education on maternal and child health care with a special focus on breastfeeding, ANC & PNC
Algeria	Annaba +Tamanrasset	<ul style="list-style-type: none"> - Opening phase of the mission: participation to the discussion on HR set up.
Balkan	Migrants Project	<ul style="list-style-type: none"> - Participation in the PATIO discussions
Burundi	Gitega	<ul style="list-style-type: none"> - Inside the Urumuri centre: health education (fistula, hygiene, nutrition, malaria, etc.), recreational activities, family planning individual sessions - Development of the women ambassador strategy: awareness raising through peer to peer contact (healed patients) - Promotion of the "Free toll line" phone number
Cambodia	Preah Vihear	<ul style="list-style-type: none"> - Conducting of different surveys (qualitative & quantitative): see main report. - Update of the population census for the different villages for the survey - Empowering and strengthening of the Volunteer malaria workers network - Support for passive and active malaria detection - Social mobilization of the target population for the new prevalence survey
DRC	Masisi	<ul style="list-style-type: none"> - Health education on all relevant medical topics in the hospital, the two health centres and the mobile clinic. - Specific focus on sexual violence & intensified vaccination activities - Support to various emergencies : measles vaccination, malaria in Nyabiondo, cholera in Kasengy camp - Conduct a qualitative study on perception of family planning - Conducting of a small survey on perception of MSF by the community leaders in Masisi Area.
	Bikengue	<ul style="list-style-type: none"> - Opening phase of the mission: participation in the discussion on the anthropological component
	Kinshasa PUC	<ul style="list-style-type: none"> - Support for most of the assessments and interventions related to: malaria, measles, vaccination, IDP's, nutrition, cholera, yellow fever, typhoid fever and haemorrhagic fever all over DRC (Bolomba, Tembo, Maniema, Boende, etc.)
	Kinshasa Coordination	<ul style="list-style-type: none"> - Work on HP monitoring indicators and data base - Routine HP activities
Egypt	Migrants in Cairo	<ul style="list-style-type: none"> - Awareness and promotion of the service activities in standby during the move of the clinic to the Maadi area. - Mapping of the different migrant communities in Cairo - Support during the opening of the new clinic - Redefining the HP activities and messages to support changes in the project
	Abu Elian	<ul style="list-style-type: none"> - Documentation of HP lessons learned during the closing phase of the project.
Haiti	Martissant & Tabarre	<ul style="list-style-type: none"> - Ongoing HP activities
India	Chhattisgarh	<ul style="list-style-type: none"> - HP activities supporting all the medical activities in the different health facilities and catchment areas: PHC, malaria, nutrition, tuberculosis, maternal health, etc.
Italy	Chagas project	<ul style="list-style-type: none"> - Support to the closing of the project (June 2014) - Documentation of HP lessons learned in a capitalization report.

Niger	Guidan Roundji	<ul style="list-style-type: none"> - HP activities in the community to mobilize and sensitize the population for the seasonal malaria chemoprophylaxis (SMC) - HP activities in the community: nutrition and tuberculosis defaulter tracing; community meetings; individual interviews of patients lost to follow up - HP activities in ATFC: health talks, appetite tests, individual interviews, reference briefings, referral briefings - HP activities in ITFC: specific support on routine vaccination, health talks, television spots, recreational activities, cooking demonstrations, counselling
Mauritania	Bassikounou	<ul style="list-style-type: none"> - Promotion of MSF services in camps and among the local population - Health education inside the health facilities on primary health care, ante & postnatal care, nutrition, family planning, water hygiene & sanitation, vaccinations, cholera, malaria - Health surveillance (mortality, pregnancy, nutrition screening, etc.) and health awareness raising in the camps
Pakistan	Islamabad coordo	<ul style="list-style-type: none"> - Conducting a HP workshop with teams from Timurgara, Karachi and Bajaur: exchange of experiences and tools
	Timurgara	<ul style="list-style-type: none"> - HP activities in the hospital to support all relevant medical topics: hygiene, maternal health, diabetes, etc. - Introduction of new HP monitoring indicator - Specific focus on use & overuse of oxytocin
	Karachi	<ul style="list-style-type: none"> - HP activities in the community: promotion of the services targeting specific communities and specific HP sessions - HP activities in the clinic to support all relevant medical topics: PHC, maternal health care, information on MSF - Support to the measles vaccination campaign in Machar colony through awareness sessions and social mobilization
	Bajaur	<ul style="list-style-type: none"> - Recruitment of a new HP team
Sierra Leone	GRC Hospital	<ul style="list-style-type: none"> - HP activities in the hospital to support all relevant medical topics: nutrition, malaria, family planning, ANC/PNC, Hygiene, use of the latrines, Lassa Fever etc. - HP strategy developed to support the Ebola outbreak
South Soudan	Gogrial	<ul style="list-style-type: none"> - HP activities in the PHCC to support all relevant medical topics: nutrition, malaria, hygiene, family planning, ANC/PNC, etc. - HP activities in the community on hold except for the fistula campaign - Specific focus on blood donations: creation of a walking blood bank - Support to the fistula campaign: awareness raising, social mobilization and support to the fistula village
	Doro	<ul style="list-style-type: none"> - Health surveillance (mortality, nutrition, vaccination, etc.) + mass MUAC screening campaign - Support vaccination campaigns (polio and measles) - Health education (in the health facilities and in the camp) on all relevant medical topics (maternal health, nutrition, Hepatitis E, etc.) - Anthropological support on HSB, local perception of risk, SRH component - Conduct door to door survey on "people's knowledge on Hepatitis E and hygiene" & on "mosquito net coverage survey"
Zimbabwe	Mbare (SGBV)	<ul style="list-style-type: none"> - Participation in the workshop on body mapping as a new tool for awareness raising and mental health - Special focus on health promotion activities carried out in the Mbare hostels to increase awareness on sexual violence amongst adults - Support the decentralization of SV services to other polyclinics in the city - Repeating the baseline survey from 2011: "perception study on sexual and gender based violence in Mbare/ Harare"
South Africa	Rustenburg (SGBV)	<ul style="list-style-type: none"> - Participation in to the discussion on household survey: "Sexual Violence prevalence, associated attitudes and health seeking behavior in Rustenburg, South Africa"

HP: Health Promotion; **OPD:** Outpatient Department; **ITFC:** Intensive therapeutic feeding centre; **EPI:** Extended Programme on Immunisation; **ANC:** Antenatal care; **PNC:** Post-natal care, **STI:** Sexually transmitted infection; **PMTCT:** Prevention of mother to child transmission; **PHC:** Primary health care; **IPD:** Inpatient Department; **MoH:** Ministry of Health; **ATFC:** Ambulatory therapeutic feeding centre; **KAP:** knowledge, attitudes and practices; **HSB:** health seeking behaviour

SECTION 15:

INTENSIVE CARE

TABLE 2: OCB ICU activities in Afghanistan, Haiti and Sierra Leone, 2014

ICU 2014		Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Admissions														
Kunduz		21	16	31	33	39	30	34	39	31	36	26	31	367
Tabarre		24	22	26	33	28	27	33	35	39	36	39	56	398
GRC-Bo		ND	ND	114	109	183	172	139	125	89	41	ND	ND	972
Mortality														
Kunduz	N°	3	2	2	7	3	4	3	2	5	2	6	3	42
	%	14.3	12.5	6.5	21.2	7.7	13.3	8.8	5.1	16.1	5.6	23.1	9.7	11.4
Tabarre	N°	4	2	5	1	2	2	4	3	4	8	2	2	39
	%	16.6	9.1	19.2	3.0	7.1	7.4	12.1	8.6	10.3	22.2	5.1	3.6	9.8
GRC-Bo	N°	ND	ND	13	31	26	49	37	17	16	6	ND	ND	195
	%	ND	ND	11.4	28.4	14.2	28.5	26.6	13.6	18.0	14.6	ND	ND	20.1
Bed occupancy rate (%)														
Kunduz (4 beds)		60	29	80	78	84	82	83	84	99	67	97	55 ^a	74
Tabarre (7 beds)		36	51	51	42	53	67	66	69	70	59	51	51 ^b	55
GRC-Bo (20 beds)		ND	ND	65	55	80	75	63	64	54	50	ND	ND	63
Average length of stay (days)														
Kunduz		3.5	2.1	3.3	2.3	2.8	2.8	3.1	2.3	4.1	2.3	3.4	4.1	3.0
Tabarre		2.3	4.5	3.0	3.6	3.6	5.6	4.0	3.3	4.5	3.6	2.7	2.3	3.8
GRC-Bo		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

GRC: Gondama Referral Centre; ICU: intensive care unit; ND: no data available

^a Number of beds increased to 6^b Number of beds increased to 9

SECTION 18:

MENTAL HEALTH

TABLE 1: OCB MH activities in emergency/short term interventions, 2014

Country	Project	Type of activities	No of new patients	No. individual consultations ¹	No. group sessions
Guinea	Conakry	Psychosocial and psychological support to patients affected by Ebola, their family and community		ND	ND
	Gueckedou	Psychosocial and psychological support to patients affected by Ebola, their family and community	1,259 (March-Dec)	2,774 (March-Dec)	122 in ETC (313 persons) 150 in community (396 persons)
Liberia	Foya	Psychosocial and psychological support to patients affected by Ebola, their family and community		ND	ND
	Monrovia	Psychosocial and psychological support to patients affected by Ebola, their family and community	ND	4,739 (Oct-Dec)	1,355 (Oct-Dec) (1,039 in ETC + 316 in community)
Sierra Leone	Bo	Psychosocial and psychological support to patients affected by Ebola, their family and community	103 (Oct-Nov)	821 (Oct-Nov)	223 persons
	Kailahun	Psychosocial and psychological support to patients affected by Ebola, their family and community	ND	1,623	49
DRC	Zongo	Psychosocial, psychological and psychiatric support for refugees from CAR in a camp	1,967	5,781	417 (5,808 persons)
	Maluku	Psychological support for Congolese people expelled from Congo Brazzaville	ND	159	NA
South Sudan	Juba-Tomping	Psychosocial and psychological support to refugees in two camps (April to August)	177 (May to Aug)	300 (May to Aug)	124 (7,677 persons) (May to Aug)
Turkey (Syria)	Hatay	Psychological support for Syrians referred to hospitals + emotional support for the team in Syria			
Ukraine	Kiev	Training of MH professionals about the setup and management of victims of violence + psychological support for severe cases	42	64	36 trainings (494 participants)
	Svyatagorsk (opened in August)	Psychosocial and psychological support for IDP, wounded and medical teams due to the conflict+ training on MH (teachers, psychologists and SW)	470 (Sep to Dec)	934 (Sep to Dec)	187 (2907 persons) (Sep to Dec)
	Artemovsk (opened in September)	Psychosocial and psychological support for IDP, wounded and medical teams due to the conflict+ training on MH (teachers, psychologists and SW)			
	Mariupol	Psychosocial and psychological support for IDP, wounded and medical teams due to the conflict		ND	ND
	Donetsk	Psychosocial and psychological support for IDP, wounded and medical teams due to the conflict+ training on MH (teachers, psychologists and SW), (opened in December)	Started in Dec (data will be available in 2015)		

¹Not including HIV counselling sessions

IPD: inpatient department; OPD: outpatient department; IDP: internally displaced persons; MH: mental health; ATFC: ambulatory therapeutic feeding centre; SW: social worker; ND: No data available; NA: Not applicable

TABLE 2: MH activities integrated into OCB medical projects, 2014

Country	Project	Type of activities	No. of new patients	Total no. individual consultations ¹	No. group sessions
New MH activities					
Greece	Athens	Care for victims of torture (mainly migrants)-including psychological and psychiatric care (offered in November)	Data not available for 2014		
Lebanon	Beirut-Shatila	MH support for women in need at the Women Center (opened in August)	89	254	20
CAR	Bangui-Castor	Psychological support to SV victims and women in need of psychological support (opened in August)	157	399	NA
Ongoing MH activities					
Egypt	Cairo	Psychological and psychiatric support for migrants from different communities across the city, and specific care for victims of sexual violence and torture/ill treatment	1,249	7,571	NA
Pakistan	Karachi	MH support integrated into an OPD in an urban slum	708	1,394	55 (1032 persons)
	Timurgara	Psychological support integrated into the MSF medical services (postoperative care, emergency room, OPD and mother and child health)	2,927	3,661	326 (5286 persons)
Afghanistan	Kunduz	Psychological support for patients and relatives at the MSF Trauma Centre	1,005	2,512	139 (1108 persons)
Kenya	Kibera	SV care, integrated within the PHC	336	732	NA
	Kibera	MH support integrated within the PHC and HIV/TB consultations			
Sierra Leone	Bo, Gondama Referral Centre	MH support integrated within the referral centre (Gondama Referral Centre, secondary level hospital) for nutrition, TB, HIV, SV and Lassa Fever (suspended in October due to Ebola)	609	1,316	NA
South Sudan	Doro	MH support to refugees from Blue Nile state (group and individual sessions) in MSF health facilities and in the community, with particular focus on the beneficiaries of nutritional activities	1,224	2,764	1,427 psycho-education (14,608) 165 group discussions (2,647 persons) 46 psycho-stimulation (1,973 mothers and child)
DRC	Masisi	Psychological support to victims of violence, including SV, integration of psychological support in the different medical departments (HGR, health posts and mobile clinics)	909	1,978	NA
RCA	Bangui-Mpoko	Psychosocial and psychological support for displaced people in refugee camp	2,564	3,122	244 (5,868 persons)
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
Zimbabwe	Harare	Care of victims of sexual violence	2,777	1,357	NA
India	Mumbai	Psychological and psychiatric support for MDR-TB/3 rd line HIV patients	ND		ND
Haiti	Tabarre	Psychological support and external referrals for specialized care in the MSF trauma centre	290	327	
Ukraine	Donetsk	Psychological and psychiatric support of MDR-TB/ HIV patients in prison	ND		ND
Lebanon	Beirut	Psychological support for refugees in Shatila camp, with a focus on Syrian refugees	244	765	201
	South Lebanon	Psychological support for Syrian refugees (groups, family and individual sessions)	166	570	178
Italy	Sicily	Screening and psychological support for asylum seekers in CAS (centre for reception and first aid) and at the point of landing (CPAS)	792	109	49
Project closures					
South Sudan	Gumruc	Psychological support to the population affected by violence (within OPD and in the community)	Closed in Jan		
Philippines	Tacloban	Psychological and psychiatric support for the populations affected by the typhoon (health facilities, mobile clinics and community), psycho-education for groups, training on MH for medical professionals-closed in February	73	105	47 (1,307 persons)
Libya	Tripoli	Psychological and psychiatric care for victims of violence (closed in July)	63 (Jan-May)	334	NA

Greece	Alexandroupolis	MH care for migrants in detention centres and police stations (closed end of February)	93	135	30 (468 persons)
Bulgaria	Vrazhdebna, Voena Ramp, Harmanli	MH care for Syrian refugees in three refugee camps (open centres),(closed end of April)	68	190	NA
Egypt	Alexandria	Psychological support for Syrian refugees in detention centre	ND		NA
Syria	Darkoush	Psychological support for patients attending MSF health facilities (closed in January)	Closed in Jan		
	Fellini	Psychological and psychiatric support for patients from Fellini hospital, OPD and maternity & mobile clinics and in the community (closed in January)	Closed in Jan		

¹Not including HIV counselling sessions

OPD: Outpatient Department; **MoH:** Ministry of Health; **SV:** Sexual Violence; **PHC:** Primary Health Care; **TB:** Tuberculosis; **MDR-TB:** multidrug resistance tuberculosis; **SRH:** Sexual and Reproductive Health; **ER:** Emergency Room; **MH:** Mental Health; **ND:** No data available; **NA:** Not applicable; **OCA:** Operational Centre Amsterdam

SECTION 19:

NUTRITION

TABLE 3: OCB therapeutic feeding programmes in 2014 by project

Country	Project locations 2014	Number of patients	% hospitalised	% cured	% died	% defaulted	Remarks
Vertical Programmes / Emergencies							
CAR	Bangui (Mpoko Aeroport / Boyrabe) ¹	1,679	NA	53.5	0.0	14.4	18.7% transferred
Integrated Programmes							
Afghanistan	Kabul	298	42.3	77.8	ND	16.8	
CAR	Bangassou / Ouango ²	426	38.3	54.7	5.7	27.6	
DRC	Nord Kivu (Masisi) ³	1,701	20.7	99.4 / 67.3	ND	0.3	11% transferred
India	Chattisgarh (Ayam Pradesh)	14	ND	ND	ND	ND	
Mauritania	Hodh El Chargui (refugees camps)	827	25.8	96.5	1.7	1.8	
Niger	Guidam Roundji	17,918	23.1	86.0	2.4	8.0	
South Sudan	Gogrial	443	30.7	43.0	ND	34.0	
	Jonglei (Pibor)	41	NA	ND	ND	ND	
	Maban (Doro)	1,543	20.5	87.2	1.8	6.5	

CAR: Central African Republic; **DRC:** Democratic Republic of Congo; **ND:** no data; **NA:** not applicable

¹ In Mpoko, 205 (12.2%) of admissions were disqualified due to wrong criteria of admissions.

² The high percentage of hospitalization because Bangassou is only ITFC. In Ouango (ITFC &ATFC) 17.9% hospitalized.

³ 67.3 % stabilized in ITFC

SECTION 20: OPERATIONAL RESEARCH & DOCUMENTATION

List of OCB-Supported Scientific Publications, 2014

1. OPERATIONAL RESEARCH

1. **Review:** Bissell K, Viney K, Brostrom R, Gounder S, Khogali M, Kishore K, et al. Building operational research capacity in the Pacific. *Public Health Action*. 2014;4(S1):S2-S13.
2. **Review:** Ramsay A, Harries AD, Zachariah R, Bissell K, Hinderaker SG, Edginton M, et al. The Structured Operational Research and Training Initiative for public health programmes. *Public Health Action*. 2014;4(2):79-84.
3. **State of the art:** Kumar AM, Zachariah R, Satyanarayana S, Reid AJ, Van den Bergh R, Tayler-Smith K, et al. Operational research capacity building using 'The Union/MSF' model: adapting as we go along. *BMC research notes*. 2014;7:819. Epub 2014/11/21.
4. **State of the art:** Kumar AMV, Satyanarayana S, Wilson NC, Chadha SS, Gupta D, Nair S, et al. Operational research leading to rapid national policy change: tuberculosis-diabetes collaboration in India. *Public Health Action*. 2014;4(2):85-8.
5. **State of the art:** Zachariah R, Kumar AMV, Reid AJ, Van den Bergh R, Isaakidis P, Draguez B, et al. Open access for operational research publications from low and middle-income countries: who pays? *Public Health Action*. 2014;4(3):141-4.
6. **Viewpoint:** Quaglio G, Ramsay A, Harries AD, Karapiperis T, Putoto G, Dye C, et al. Calling on Europe to support operational research in low-income and middle-income countries. *Lancet Glob Health*. 2014;2:e308-9.
7. **Viewpoint:** Nagaraja SB, Menezes RG, Zachariah R. Open submission and open access: the right way ahead. *Public Health Action*. 2014;4(1):72.
8. **Viewpoint:** Harries AD, Zachariah R, Ramsay A, Kumar AMV, Reid AJ, Terry RF, et al. Does research make a difference to public health? Time for scientific journals to cross the Rubicon. *Public Health Action*. 2014;4(1):2-3.
9. **Viewpoint:** Harries AD, Bianchi L, Jensen PM, Pantages M, Bissell K, Kumar AMV, et al. Public Health Action for public health action. *Public Health Action*. 2014;4(3):139-40.
10. **Viewpoint:** Harries AD, Marais B, Kool B, Ram S, Kumar AMV, Gounder S, et al. Mentorship for operational research capacity building: hands-on or hands-off? *Public Health Action*. 2014;4(S1):S56-8.
11. **Original research:** Zachariah R, Guillermin N, Berger S, Kumar AM, Satyanarayana S, Bissell K, et al. Research to policy and practice change: is capacity building in operational research delivering the goods? *Trop Med Int Health*. 2014;19(9):1068-75. Epub 2014/06/10.
12. **Original research:** Guillermin N, Tayler-Smith K, Berger SD, Bissell K, Kumar AMV, Ramsay A, et al. What happens after participants complete a Union-MSF structured operational research training course? *Public Health Action*. 2014;4(2):89-95.

2. HEALTH POLICY

13. **Original research:** Maini R, Van den Bergh R, van Griensven J, Tayler-Smith K, Ousley J, Carter D, et al. Picking up the bill - improving health-care utilisation in the Democratic Republic of Congo through user fee subsidisation: a before and after study. *BMC Health Serv Res*. 2014;14:504. Epub 2014/11/06. **(SORT IT student)**
14. **Original research:** Iribagiza MK, Manikuzwe A, Aquino T, Amoroso C, Zachariah R, van Griensven J, et al. Fostering interest in research: evaluation of an introductory research seminar at hospitals in rural Rwanda. *Public Health Action*. 2014;4(4):271-5. **(SORT IT student)**

3. HEALTH SYSTEMS & PROGRAM MONITORING

15. **Original research:** De Maio G, Van den Bergh R, Garelli S, Maccagno B, Raddi F, Stefanizzi A, et al. Reaching out to the forgotten: providing access to medical care for the homeless in Italy. *Int Health*. 2014;4(2):93-8. Epub 2014/02/08.
16. **Original research:** Bemelmans M, Baert S, Goemaere E, Wilkinson L, Vandendyck M, van Cutsem G, et al. Community-supported models of care for people on HIV treatment in sub-Saharan Africa. *Trop Med Int Health*. 2014;19(8):968-77. Epub 2014/06/04.
17. **Original research:** Jobanputra K, Parker LA, Azih C, Okello V, Maphalala G, Jouquet G, et al. Impact and programmatic implications of routine viral load monitoring in Swaziland. *J Acquir Immune Defic Syndr*. 2014;67(1):45-51. Epub 2014/05/30. **(SORT IT student)**
18. **Original research:** Nic Carthaigh N, De Gryse B, Esmati AS, Nizar B, Van Overloop C, Fricke R, et al. Patients struggle to access effective health care due to ongoing violence, distance, costs and health service performance in Afghanistan. *Int Health*. 2014. Epub 2014/12/11.
19. **Original research:** Khandu L, Zachariah R, Van den Bergh R, Wangchuk D, Tshering N, Wangmo D, et al. Providing a gateway to prevention and care for the most at-risk populations in Bhutan: is this being achieved? *Public Health Action*. 2014;4(1):22-7. **(SORT IT student)**
20. **Original research:** Chang Y-P, Duo L, Kumar AMV, Achanta S, Xue H-M, Satyanarayana S, et al. Retention and HIV seroconversion among drug users on methadone maintenance treatment in Yunnan, China. *Public Health Action*. 2014;4(1):28-34. **(SORT IT student)**
21. **Original research:** Denisiuk O, Smyrnov P, Kumar AMV, Achanta S, Boyko K, Khogali M, et al. Sex, drugs and prisons: HIV prevention strategies for over 190 000 clients in Ukraine. *Public Health Action*. 2014;4(2):96-101. **(SORT IT student)**
22. **Original research:** Geoffroy E, Harries AD, Bissell K, Schell E, Vumbwwe A, Tayler-Smith K, et al. Bringing care to the community: expanding access to health care in rural Malawi through mobile health clinics. *Public Health Action*. 2014;4(4):252-8. **(SORT IT student)**

4. HIV

23. **Review:** Bekker LG, Venter F, Cohen K, Goemare E, Van Cutsem G, Boulle A, et al. Provision of antiretroviral therapy in South Africa: the nuts and bolts. *Antiviral therapy*. 2014;19 Suppl 3:105-16. Epub 2014/10/14.
24. **Review:** Harries AD, Zachariah R. *AIDS Review Africa Health*. 2014;36(2):46-7.
25. **Viewpoint:** Ford N, Meintjes G, Pozniak A, Bygrave H, Hill A, Peter T, et al. The future role of CD4 cell count for monitoring antiretroviral therapy. *Lancet Infect Dis*. 2014. Epub 2014/12/04.
26. **Viewpoint:** Ford N, Stinson K, Davies MA, Cox V, Patten G, Cragg C, et al. Is it safe to drop CD4+ monitoring among virologically suppressed patients: a cohort evaluation from Khayelitsha, South Africa. *Aids*. 2014;28(14):2003-5. Epub 2014/08/08.
27. **Original research:** Rohner E, Valeri F, Maskew M, Prozesky H, Rabie H, Garone D, et al. Incidence rate of Kaposi sarcoma in HIV-infected patients on antiretroviral therapy in Southern Africa: a prospective multicohort study. *J Acquir Immune Defic Syndr*. 2014;67(5):547-54. Epub 2014/11/14.
28. **Original research:** Boulle A, Schomaker M, May MT, Hogg RS, Shepherd BE, Monge S, et al. Mortality in patients with HIV-1 infection starting antiretroviral therapy in South Africa, Europe, or North America: a collaborative analysis of prospective studies. *PLoS Med*. 2014;11(9):e1001718. Epub 2014/09/10.
29. **Original research:** Fajardo E, Metcalf CA, Chaillet P, Aleixo L, Pannus P, Panunzi I, et al. Prospective evaluation of diagnostic accuracy of dried blood spots from finger prick samples for determination of HIV-1 load with the NucliSENS Easy-Q HIV-1 version 2.0 assay in Malawi. *J Clin Microbiol*. 2014;52(5):1343-51. Epub 2014/02/07.
30. **Original research:** Balak DA, Bissell K, Roseveare C, Ram S, Devi RR, Graham SM. Absolute lymphocyte count is not a suitable alternative to CD4 count for determining initiation of antiretroviral therapy in Fiji. *J Trop Med*. 2014;2014:715363. Epub 2014/11/18. **(SORT IT student)**
31. **Original research:** Molfino L, Kumar AM, Isaakidis P, Van den Bergh R, Khogali M, Hinderaker SG, et al. High attrition among HIV-infected patients with advanced disease treated in an intermediary referral center in Maputo, Mozambique. *Global health action*. 2014;7:23758. Epub 2014/04/11. **(SORT IT student)**
32. **Original research:** Khan S, Das M, Andries A, Deshpande A, Mansoor H, Saranchuk P, et al. Second-line failure and first experience with third-line antiretroviral therapy in Mumbai, India. *Global health action*. 2014;7:24861. Epub 2014/08/03.
33. **Original research:** Shankar D, Kumar AMV, Rewari B, Kumar S, Shastri S, Satyanarayana S, et al. Retention in pre-antiretroviral treatment care in a district of Karnataka, India: how well are we doing? *Public Health Action*. 2014;4(4):210-5. **(SORT IT student)**

5. HIV/TUBERCULOSIS CO-INFECTION

34. **Original research:** Rangaka MX, Wilkinson RJ, Bouille A, Glynn JR, Fielding K, van Cutsem G, et al. Isoniazid plus antiretroviral therapy to prevent tuberculosis: a randomised double-blind, placebo-controlled trial. *Lancet*. 2014;384(9944):682-90. Epub 2014/05/20.
35. **Original research:** Marcy O, Laureillard D, Madec Y, Chan S, Mayaud C, Borand L, et al. Causes and determinants of mortality in HIV-infected adults with tuberculosis: an analysis from the CAMELIA ANRS 1295-CIPRA KH001 randomized trial. *Clin Infect Dis*. 2014;59(3):435-45. Epub 2014/04/25.
36. **Original research:** Isaakidis P, Das M, Kumar AM, Peskett C, Khetarpal M, Bamne A, et al. Alarming levels of drug-resistant tuberculosis in HIV-infected patients in metropolitan Mumbai, India. *PLoS One*. 2014;9(10):e110461. Epub 2014/10/22.
37. **Original research:** Furin J, Isaakidis P, Reid AJ, Kielmann K. 'I'm fed up': experiences of prior anti-tuberculosis treatment in patients with drug-resistant tuberculosis and HIV. *Int J Tuberc Lung Dis*. 2014;18(12):1479-84. Epub 2014/12/18.
38. **Original research:** Das M, Isaakidis P, Van den Bergh R, Kumar AM, Nagaraja SB, Valkayath A, et al. HIV, multidrug-resistant TB and depressive symptoms: when three conditions collide. *Global health action*. 2014;7:24912. Epub 2014/09/13. **(SORT IT student)**
39. **Original research:** Nagai S, Robinson R, Rahamefy JR, Randriambeloso SJ, Ranaivomanana DA, Razafindranaivo T, et al. Provider-initiated HIV testing and counselling for TB in low HIV prevalence settings: is it worthwhile? *Trans R Soc Trop Med Hyg*. 2014;108(3):173-5. Epub 2014/01/28. **(SORT IT student)**
40. **Original research:** Albuquerque T, Isaakidis P, Das M, Saranchuk P, Andries A, Misquita DP, et al. Infection control in households of drug-resistant tuberculosis patients co-infected with HIV in Mumbai, India. *Public Health Action*. 2014;4(1):35-41. **(SORT IT student)**
41. **Original research:** Kanyerere H, Mganga A, Harries AD, Tayler-Smith K, Jahn A, Chimbwandira FM, et al. Decline in national tuberculosis notifications with national scale-up of antiretroviral therapy in Malawi. *Public Health Action*. 2014;4(2):113-5.

6. TUBERCULOSIS (INCLUDING DRUG-RESISTANT TUBERCULOSIS)

42. **Review:** Acosta CD, Dadu A, Ramsay A, Dara M. Drug-resistant tuberculosis in Eastern Europe: challenges and ways forward. *Public Health Action*. 2014;4(S2):S3-S12.
43. **Viewpoint:** Isaakidis P, Gupta S, Menghaney L. Zero tuberculosis at the latest International AIDS Congress in Asia and the Pacific? *Lancet Glob Health*. 2014;2(4):e204-5. Epub 2014/08/12.
44. **Viewpoint:** Isaakidis P, Smith S, Majumdar S, Furin J, Reid T. Calling tuberculosis a social disease--an excuse for complacency? *Lancet*. 2014;384(9948):1095. Epub 2014/09/23.
45. **Viewpoint - comment on 53-63:** Cox H, Ford N. The scourge of tuberculosis and anti-tuberculosis drug resistance in Eastern Europe. *Public Health Action*. 2014;4(3):S1-S2.
46. **Original research:** Das M, Isaakidis P, Shenoy R, Anicete R, Sharma HK, Ao I, et al. Self-administered tuberculosis treatment outcomes in a tribal population on the indo-myanmar border, Nagaland, India. *PLoS One*. 2014;9(9):e108186. Epub 2014/09/27.

47. **Original research:** Khogali M, Zachariah R, Reid T, Alipon SC, Zimble S, Mahama G, et al. Self-administered treatment for tuberculosis among pastoralists in rural Ethiopia: how well does it work? *Int Health*. 2014;6(2):112-7. Epub 2014/03/19.
48. **Original research:** Hill PC, Dye C, Viney K, Tabutoa K, Kienene T, Bissell K, et al. Mass treatment to eliminate tuberculosis from an island population. *Int J Tuberc Lung Dis*. 2014;18(8):899-904. Epub 2014/09/10.
49. **Original research:** Oladimeji O, Isaakidis P, Obasanya OJ, Eltayeb O, Khogali M, Van den Bergh R, et al. Intensive-phase treatment outcomes among hospitalized multidrug-resistant tuberculosis patients: results from a nationwide cohort in Nigeria. *PLoS One*. 2014;9(4):e94393. Epub 2014/04/12. **(SORT IT student)**
50. **Original research:** Singla N, Satyanarayana S, Sachdeva KS, Van den Bergh R, Reid T, Tayler-Smith K, et al. Impact of introducing the line probe assay on time to treatment initiation of MDR-TB in Delhi, India. *PLoS One*. 2014;9(7):e102989. Epub 2014/07/25. **(SORT IT student)**
51. **Original research:** Tamani T, Bissell K, Tayler-Smith K, Gounder S, Linh NN, Graham SM. The trend of tuberculosis cases over 60 years in Fiji's largest treatment centre: 1950-2010. *Public Health Action*. 2014;4(1):42-6. **(SORT IT student)**
52. **Original research:** Abeygunawardena SC, Sharath BN, Van den Bergh R, Naik B, Pallewatte N, Masaima MNN. Management of previously treated tuberculosis patients in Kalutara district, Sri Lanka: how are we faring? *Public Health Action*. 2014;4(2):105-9. **(SORT IT student)**
53. **Original research:** Davtyan K, Zachariah R, Davtyan H, Ramsay A, Denisiuk O, Manzi M, et al. Performance of decentralised facilities in tuberculosis case notification and treatment success in Armenia. *Public Health Action*. 2014;4(3):S13-S6. **(SORT IT student)**
54. **Original research:** Khaliukin A, Kumar AMV, Skrahina A, Hurevich H, Rusovich V, Gadoev J, et al. Poor treatment outcomes among multidrug-resistant tuberculosis patients in Gomel Region, Republic of Belarus. *Public Health Action*. 2014;4(S2):S24-S8. **(SORT IT student)**
55. **Original research:** Klimuk D, Hurevich H, Harries AD, Babrukevich A, Kremer K, Van den Bergh R, et al. Tuberculosis in health care workers in Belarus. *Public Health Action*. 2014;4(S2):S29-S33. **(SORT IT student)**
56. **Original research:** Toit K, Altraja A, Acosta CD, Viiklepp P, Kremer K, Kummik T, et al. A four-year nationwide molecular epidemiological study in Estonia: risk factors for tuberculosis transmission. *Public Health Action*. 2014;4(S2):S34-S40. **(SORT IT student)**
57. **Original research:** Kuchukhidze G, Kumar AMV, de Colombani P, Khogali M, Nanava U, Blumberg HM, et al. Risk factors associated with loss to follow-up among multidrug-resistant tuberculosis patients in Georgia. *Public Health Action*. 2014;4(S2):S41-S6. **(SORT IT student)**
58. **Original research:** Kuksa L, Riekstina V, Leimane V, Ozere I, Skenders G, Van den Bergh R, et al. Multi- and extensively drug-resistant tuberculosis in Latvia: trends, characteristics and treatment outcomes. *Public Health Action*. 2014;4(S2):S47-S53. **(SORT IT student)**
59. **Original research:** Lucenko I, Riekstina V, Perevosikovs J, Mozgis D, Khogali M, Gadoev J, et al. Treatment outcomes among drug-susceptible tuberculosis patients in Latvia, 2006-2010. *Public Health Action*. 2014;4(S2):S54-S8. **(SORT IT student)**

60. **Original research:** Ciobanu A, Domete L, Soltan V, Bivol S, Severin L, Plesca V, et al. Do incentives improve tuberculosis treatment outcomes in the Republic of Moldova? *Public Health Action*. 2014;4(S2):S59-S63. **(SORT IT student)**
61. **Original research:** Dolgusev O, Obevezenco N, Padalco O, Pankrushev S, Ramsay A, Van den Bergh R, et al. Pattern of primary tuberculosis drug resistance and associated treatment outcomes in Transnistria, Moldova. *Public Health Action*. 2014;4(S2):S64-S6. **(SORT IT student)**
62. **Original research:** Lytvynenko N, Cherenko S, Feschenko Y, Pogrebna M, Senko Y, Barbova A, et al. Management of multi- and extensively drug-resistant tuberculosis in Ukraine: how well are we doing? *Public Health Action*. 2014;4(S2):S67-S72. **(SORT IT student)**
63. **Original research:** Rusovich V, Kumar AMV, Skrahina A, Hurevich H, Astrauko A, de Colombani P, et al. High time to use rapid tests to detect multidrug resistance in sputum smear-negative tuberculosis in Belarus. *Public Health Action*. 2014;4(4):243-8. **(SORT IT student)**

7. MALARIA

64. **Original research:** Bosman P, Stassijns J, Nackers F, Canier L, Kim N, Khim S, et al. Plasmodium prevalence and artemisinin-resistant falciparum malaria in Preah Vihear Province, Cambodia: a cross-sectional population-based study. *Malar J*. 2014;13:394. Epub 2014/10/08.
65. **Original research:** Maes P, Harries AD, Van den Bergh R, Noor A, Snow RW, Tayler-Smith K, et al. Can timely vector control interventions triggered by atypical environmental conditions prevent malaria epidemics? A case-study from Wajir County, Kenya. *PLoS One*. 2014;9(4):e92386. Epub 2014/04/05. **(SORT IT student)**

8. EBOLA

66. **State of the art:** Chertow DS, Kleine C, Edwards JK, Scaini R, Giuliani R, Sprecher A. Ebola virus disease in West Africa--clinical manifestations and management. *N Engl J Med*. 2014;371(22):2054-7. Epub 2014/11/06.
67. **Viewpoint:** Philips M, Markham A. Ebola: a failure of international collective action. *Lancet*. 2014;384(9949):1181.
68. **Original research:** Baize S, Pannetier D, Oestereich L, Rieger T, Koivogui L, Magassouba N, et al. Emergence of Zaire Ebola virus disease in Guinea. *N Engl J Med*. 2014;371(15):1418-25. Epub 2014/04/18.
69. **Original research:** Baggi F, Taybi A, Kurth A, Van Herp M, Di Caro A, Wolfel R, et al. Management of pregnant women infected with Ebola virus in a treatment centre in Guinea, June 2014. *Euro Surveill*. 2014;19(49). Epub 2014/12/20.
70. **Original research:** Barry M, Traore FA, Sako FB, Kpamy DO, Bah El, Poncin M, et al. Ebola outbreak in Conakry, Guinea: epidemiological, clinical, and outcome features. *Medicine et maladies infectieuses*. 2014;44(11-12):491-4. Epub 2014/11/14.
71. **Original research:** Fitzpatrick G, Vogt F, Moi Gbabei O, Black B, Santantonio M, Folkesson E, et al. Describing readmissions to an Ebola case management centre (CMC), Sierra Leone, 2014. *Euro Surveill*. 2014;19(40):20924. Epub 2014/10/18.
72. **Viewpoint:** Gerard SP, Kyrousis E, Zachariah R. Measles in the Democratic Republic of Congo: an urgent wake-up call to adapt vaccination implementation strategies. *Public Health Action*. 2014;4(1):6-8.

73. Original research: Porta MI, Lenglet A, de Weerd S, Crestani R, Sinke R, Frawley MJ, et al. Feasibility of a preventive mass vaccination campaign with two doses of oral cholera vaccine during a humanitarian emergency in South Sudan. *Trans R Soc Trop Med Hyg.* 2014;108(12):810-5. Epub 2014/10/15.

74. Original research: Dahmane A, van Griensven J, Van Herp M, Van den Bergh R, Nzomukunda Y, Prior J, et al. Constraints in the diagnosis and treatment of Lassa Fever and the effect on mortality in hospitalized children and women with obstetric conditions in a rural district hospital in Sierra Leone. *Trans R Soc Trop Med Hyg.* 2014;108(3):126-32. Epub 2014/02/19. **(SORT IT student)**

75. Original research: Salih NA, van Griensven J, Chappuis F, Antierens A, Mumina A, Hammam O, et al. Liposomal amphotericin B for complicated visceral leishmaniasis (kala-azar) in eastern Sudan: how effective is treatment for this neglected disease? *Trop Med Int Health.* 2014;19(2):146-52. Epub 2014/01/18. **(SORT IT student)**

76. Original research: Pereira PR, Isaakidis P, Hinderaker SG, Ali E, van den Boogaard W, Viana KS, et al. Burden of isolation for multidrug-resistant organisms in a tertiary public hospital in Southern Brazil. *American journal of infection control.* 2014. Epub 2014/12/08. **(SORT IT student)**

77. Original research: Mbuthia GW, Harries AD, Obala AA, Nyamogoba HDN, Simiyu C, Edginton ME, et al. Childhood immunisation in Bungoma County, Kenya, from 2008 to 2011: need for improved uptake. *Public Health Action.* 2014;4(1):9-11. **(SORT IT student)**

78. Original research: Das AK, Harries AD, Hinderaker SG, Zachariah R, Ahmed B, Shah GN, et al. Active and passive case detection strategies for the control of leishmaniasis in Bangladesh. *Public Health Action.* 2014;4(1):15-21. **(SORT IT student)**

10. NON-COMMUNICABLE DISEASES

79. Original research: Sobry A, Kizito W, Van den Bergh R, Tayler-Smith K, Isaakidis P, Cheti E, et al. Caseload, management and treatment outcomes of patients with hypertension and/or diabetes mellitus in a primary health care programme in an informal setting. *Trop Med Int Health.* 2014;19(1):47-57. Epub 2014/05/23. **(SORT IT student)**

80. Original research: Khader A, Ballout G, Shahin Y, Hababeh M, Farajallah L, Zeidan W, et al. What happens to Palestine refugees with diabetes mellitus in a primary healthcare centre in Jordan who fail to attend a quarterly clinic appointment? *Trop Med Int Health.* 2014;19(3):308-12. Epub 2014/01/07.

81. Original research: Khader A, Farajallah L, Shahin Y, Hababeh M, Abu-Zayed I, Zachariah R, et al. Hypertension and treatment outcomes in Palestine refugees in United Nations Relief and Works Agency primary health care clinics in Jordan. *Trop Med Int Health.* 2014;19(10):1276-83. Epub 2014/07/22.

82. Original research: Kodouda SF, Zachariah R, Khogali M, van Griensven J, Saeed M, Hussein Ibrahim E, et al. How well are asthma treatment cards filled out in public health centres in Gazeera State, Sudan? *Public Health Action.* 2014;4(2):116-21. **(SORT IT student)**

83. Original research: Edwards JK, Thiongó A, Van den Bergh R, Kizito W, Kosgei RJ, Sobry A, et al. Preventable but neglected: rickets in an informal settlement, Nairobi, Kenya. *Public Health Action.* 2014;4(2):122-7. **(SORT IT student)**

11. RATIONAL DRUG USE

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15. OTHER OCB/LUXOR SUPPORTED PUBLICATIONS

There were a total of nineteen additional publications arising from the Structured Operational Research and Training Initiative (SORT IT) courses. These are jointly developed and implemented by the Operational Research Unit (LuxOR) at Médecins Sans Frontières, Brussels Operational Centre and SORT IT partners.

SORT IT is a global partnership including the World Health Organization (WHO/TDR), Médecins sans Frontières, the International Union Against Tuberculosis and Lung Disease (The Union), University of Bergen, Norway; the Institute of Tropical Medicine, Antwerp, Belgium; The University of Nairobi, Kenya and the University of Chester, United Kingdom.

These publications reflect the impact of operational research in networking and as a catalyst for wider change.

102. Viewpoint – comment on 19-21: Kamarulzaman A. Challenges in expanding access to antiretroviral therapy for key affected populations. *Public Health Action.* 2014;4(2):73.

103. Viewpoint – comment on 33: Siedner MJ. Moving past the 'pre-treatment' era of HIV care. *Public Health Action.* 2014;4(4):209.

104. Original research: Yirdaw KD, Jerene D, Gashu Z, Edginton ME, Kumar AM, Letamo Y, et al. Beneficial effect of isoniazid preventive therapy and antiretroviral therapy on the incidence of tuberculosis in people living with HIV in Ethiopia. *PLoS One.* 2014;9(8):e104557. Epub 2014/08/12.

105. Viewpoint: Acosta CD, Rusovich V, Harries AD, Ahmedov S, van den Boom M, Dara M. A new roadmap for childhood tuberculosis. *Lancet Glob Health.* 2014;2(1):e15-7. Epub 2014/08/12. **(SORT IT student)**

- 106. Viewpoint – comment on 48:** Azman AS, Dowdy DW. Bold thinking for bold results: modeling the elimination of tuberculosis. *Int J Tuberc Lung Dis.* 2014;18(8):883. Epub 2014/09/10.
- 107. Original research:** Xia Y, Goel S, Harries AD, Zhang Z, Gao T, Wang L, et al. Prevalence of extended treatment in pulmonary tuberculosis patients receiving first-line therapy and its association with recurrent tuberculosis in Beijing, China. *Trans R Soc Trop Med Hyg.* 2014;108(7):402-7. Epub 2014/05/28. **(SORT IT student)**
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- 109. Original research:** Alikhanova N, Akhundova I, Seyfaddinova M, Mammadbayov E, Mirskulava V, Rüsç-Gerder S, et al. First national survey of anti-tuberculosis drug resistance in Azerbaijan and risk factors analysis. *Public Health Action.* 2014;4(S2):S17-S23. **(SORT IT student)**
- 110. Original research:** Prasad P, Gounder S, Varman S, Viney K. Sputum smear conversion and treatment outcomes for tuberculosis patients with and without diabetes in Fiji. *Public Health Action.* 2014;4(3):159-63 **(SORT IT student)**
- 111. Original research:** Alo A, Gounder S, Graham SM. Clinical characteristics and treatment outcomes of tuberculosis cases hospitalised in the intensive phase in Fiji. *Public Health Action.* 2014;4(3):164-8. **(SORT IT student)**
- 112. Original research:** Mahadeo R, Gounder S, Graham SM. Changing from single-drug to fixed-dose combinations: experience from Fiji. *Public Health Action.* 2014;4(3):169-73. **(SORT IT student)**
- 113. Original research:** Narayan N, Viney K, Varman S. Comparison of tuberculosis treatment outcomes by method of treatment supervision in the Fiji Islands. *Public Health Action.* 2014;4(3):174-8. **(SORT IT student)**
- 114. Original research:** Gounder A, Gounder S, Reid SA. Evaluation of the implementation of the Xpert® MTB/RIF assay in Fiji. *Public Health Action.* 2014;4(3):179-83. **(SORT IT student)**
- 115. Original research:** Reddy M, Gounder S, Reid SA. Tuberculosis diagnostics in Fiji: how reliable is culture? *Public Health Action.* 2014;4(3):184-8. **(SORT IT student)**
- 116. Original research:** Kumar R, Goel S, Harries AD, Lal P, Singh RJ, Kumar AM, et al. How good is compliance with smoke-free legislation in India? Results of 38 subnational surveys. *Int Health.* 2014;6(3):189-95. Epub 2014/05/31. **(SORT IT student)**
- 117. Original research:** Mi F, Jiang G, Du J, Li L, Yue W, Harries AD, et al. Is resistance to anti-tuberculosis drugs associated with type 2 diabetes mellitus? A register review in Beijing, China. *Global health action.* 2014;7:24022. Epub 2014/05/23. **(SORT IT student)**
- 118. Original research:** Waloki M, Rosevaere C, Tikolevu L, Ram S, Bissell K. Stroke rehabilitation in Fiji: are patients receiving services? *Public Health Action.* 2014;4(3):150-4. **(SORT IT student)**
- 119. Original research:** Kumar K, Snowdon W, Ram S, Khan S, Cornelius M, Tukana I, et al. Descriptive analysis of diabetes-related amputations at the Colonial War Memorial Hospital, Fiji, 2010–2012. *Public Health Action.* 2014;4(3):155-8. **(SORT IT student)**
- 120. Original research:** Mubiligi JM, Hedt-Gauthier B, Mpunga T, Tapela N, Okao N, Harries AD, et al. Caring for patients with surgically resectable cancers: experience from a specialised centre in rural Rwanda. *Public Health Action.* 2014;4(2):128-32. **(SORT IT student)**

SECTION 24: SURGICAL ACTIVITIES

TABLE 1: Overview of OCB surgical activities per project, 2014.

Mission		AFG	AFG	AFG	BDI	CAF	CAF	CAF	COD
Project		Kabul	Khost	Kunduz	Gitega	Bangassou	Castors	Ouango	Masisi
Patients	number	949	529	1,966	259	579	367	181	2,066
Cases	number	978	543	4,241	364	1,024	467	204	3,055
Procedures	number	1,033	650	5,962	385	1,056	478	206	3,180
Mean Age	years	27	30	25	33	27	24	21	25
Female	%	74.3	100	15.1	100	56.8	100	40.4	77.7
All trauma	%	5.1	0.0	99.8	0.0	14.5	0.0	7.7	14.1
Violent trauma	%	2.2	0.0	35.1	0.0	2.8	0.0	2.2	4.4
Caesarean section	%	53.1	81.3	0.0	NA	20.4	62.9	18.8	53.8
Post-op infection	%	1.7	ND	6.4	5.4	ND	ND	ND	0.8
Primary interventions	%	97.0	97.4	46.4	71.2	56.5	78.6	88.7	67.7
Emergent cases	%	97.8	100	100	1.6	100	100	70.6	94.6
Minor / wound surgery	%	9.2	0.4	63.4	0.5	60.4	21.4	61.8	50.0
Spinal anaesthesia	%	77.5	75.1	14.1	96.1	22.3	34.7	18.6	38.1
Spinal procedure / C-section	%	97.0	88.4	NA	NA	56.8	73.6	47.1	95.0
Intraoperative mortality	%	0.2	0.2	0.2	0.0	0.4	0.6	0.0	0.2
Occupancy rate	minutes/ day	195	111	738	58	180	167	70	442

(*): indirect activities only; NA: not applicable; ND: no data; spinal procedure: spinal and combined anaesthesia.

COD	HTI	IND	MRT	PAK	PHL	SLE	SSD	SYR
Nyabiondo (*)	Tabarre	Mon (*)	Bassikounou	Timurgara	Guiuan	Bo	Gogrial	Jabal-Akkrad
103	2,649	108	244	1,194	240	413	347	2
104	4,688	158	261	1,282	261	440	430	2
104	5,851	162	261	1,374	279	515	452	2
27	30	28	21	31	37	25	20	26
92.2	22.5	59.3	59.0	91.6	53.8	100	47.0	100
9.7	93.2	30.6	17.6	8.1	21.3	0.0	35.7	0.0
9.7	17.0	3.7	2.0	2.3	0.8	0.0	10.1	0.0
90.3	0.0	12.0	38.1	74.1	22.5	87.9	15.3	50.0
ND	2.9	ND	ND	ND	ND	ND	ND	ND
99.0	56.5	68.4	93.5	93.1	92.0	93.9	80.7	100
100	100	80.4	100	100	72.4	100	98.8	100
9.6	43.4	67.1	34.9	9.5	48.7	5.7	63.5	0.0
89.4	28.8	16.5	38.3	62.9	43.7	74.3	13.3	100
100	NA	92.3	88.2	84.5	98.1	90.1	90.6	100
0.0	0.4	0.0	0.0	0.2	0.0	0.0	0.2	0.0
16	1120	37	46	202	88	153	195	150

LABORATORY

TABLE 1: OCB laboratory activities, 2014

Country	Project	No. of Labs	HIV & TB	Malaria	Transfusions (only)	Hospital (transfusions included)	Other	Project status
Algeria	Alger	1	1					New/Technical support
Cambodia	Preha Vihar	1		1				Ongoing
DRC	Kinshasa	1	1					Ongoing
	Masisi	1				1		Ongoing
	Nyabiondo	1			1			NEW
Burundi	Kirundo	1		RDTs + PCR and microscopy for OR				Closed
RCA	Bangassou	1				1		NEW
Kenya	Nairobi	1	1					Ongoing
Guinea	Conakry	1	1					Ongoing
South Sudan	Pibor	1				1		Ongoing
	Gogrial	1			1			Ongoing
Niger	Guidan Roudji	1				1		Ongoing
Haiti	Port-au-Prince	1				1	1 (Microbiology (referred))	Ongoing
Ukraine	Donetsk	1	1 (+MDR)					Ongoing
Zimbabwe	Birch. B.	1	1					Ongoing
	Gutu	1	1					Ongoing
	Murambinda	1	1					Ongoing
South Africa	Khayelitsha	1	1 (+MDR)					Ongoing
	KwaZulu-Natal	1	1					Ongoing
Malawi	Thyolo	1	1					Ongoing
	Nsanje	1	1					Ongoing
Sierra Leone	Bo	1			1			Closed
LESOTHO	Roma	1	1					Ongoing
Mozambique	Maputo	1	1					Ongoing
	Tete	1	1					Ongoing
Afghanistan	Kabul	1				1		Ongoing
Pakistan	Khost	1			1			Ongoing
	Kunduz	1				1	1 (microbiology)	Ongoing
	Timurgara	1			1			Ongoing
Total Active Laboratories		27	15	2	5	7	2	-----

MEDICAL DATA

TABLE 1: MSF – OCB Global Summary of Outpatient and Inpatient data using Epicentre OPD/IPD/Gynobs Tools in 2014

Countries	Centre Africa Republic	Democratic Republic of Congo	Kenya	Niger	Sierra Leone	Total
N° of Consultations	NA	56,002	79,847	118,489	NA	254,338
New cases	NA	54,809	73,172	116,525	NA	244,506
N° of <5 yrs	NA	17,887	24,213	116,525	NA	158,625
N° of IPD	12,448	3,344	NA	10,144	NA	25,936
<5 yrs	4,548	2,706	NA	10,142	NA	17,396
Exits	12,450	3,346	NA	9,821	NA	25,617
Discharged %	97.6	95.5	NA	96.0	NA	96.7
Defaulters%	0.4	1.3	NA	0.5	NA	0.6
Deaths%	2.0	3.2	NA	3.5	NA	2.7
N° of ANC	2,783	8,320	12,305	NA	NA	23,408
N° of deliveries	1,439	1,700	2,313	NA	509	5,961
C. sections%	9.5	3.9	1.0	NA	61.1	8.6
N° of Family Planning	337	624	12,067	NA	427	13,455

NA: Not Available; N°: Number



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