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OCB Medical Activity Report 2020

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OCB – MEDICAL ACTIVITY REPORT 2020

A health worker prepares to swab a patient during a mass COVID-19 screening and testing event held in Johannesburg, South Africa where MSF contact tracers assisted with training, monitoring and conducting tests. © Tadeu Andre/MSF

Sheetal Jainavar, community health educator, giving information about COVID-19 preventive measures at the health centre in the Pandit Madan Mohan Malviya Shatabdi hospital located in Govandi M East ward Mumbai, India. © Abhinav Chatterjee/MSF

A local resident of Machar Colony receiving soaps and reusable facemasks during a distribution by MSF in Machar Colony, Karachi; Pakistan. © Nasir Ghafoor/MSF

Medical staff wearing personal protective equipment (PPE) to enter the high-risk area of the COVID-19 treatment unit set up by MSF at Saint-Joseph Hospital in Kinshasa, Democratic Republic of the Congo (DRC). © Franck Ngonga/MSF

Standing close to the local market in Niono, Mali, Mohamed and Nafisatou discuss the COVID-19 awareness-raising programme for the day. © Lamine Keita/MSF


Maps generated using StatPlanet v3.0
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Dear Colleagues, Dear Friends,

Together, through our contributions, we make Médecins Sans Frontières. In 2020, we were more than 45,000 team members making a difference for the health needs and demands of people and communities across the world. The support network staff (HQ) and the international staff account for less than 10% each of the global workforce. This means that more than 80% of us are national staff hired in countries where we run operations. This report is your report. This report is a way to celebrate the work of MSF national staff, your work.

We have risen to the challenge of the pandemic. And we have learned some lessons. The first one is not to underestimate the threat of emerging infections on people or their access to care. The second is to empower national staff, as they will have to lead. The third is to work hard to regain or maintain our ability to provide quick guidance, our speed of deployment and our emergency response capacity. Although oxygen has always been in short supply, it has taken COVID-19 for us to realise how bad it was, how unfair it was. Caring for critically ill patients is no longer on the fringes, even if there is an ongoing debate on human resources, costs and levels of care.

With this enormous pressure on us we have accelerated the organisational transformation, particularly in the way projects are supported. The Southern Africa Regional Support Team is a reality, born out of the first pilot of the field recentralisation strategy. The Central Africa Regional Support Unit is being built, with a core team expected for September this year. Other initiatives are ongoing for project support in Europe and in Latin America. Operational Centre Brussels (OCB) is morphing into a networked operational directorate. With it comes a willingness to look at regional support hubs, decentralised units and delocalised staff. Connected locally, serving globally.

For some, the process is too slow; for others it’s being done in haste. Thanks to the “Operations Support Initiative” launched by the General Direction, the process is being monitored, shared, discussed, and adapted. A GIS model will help to map the whole support network to know who’s who and who’s where in a dynamic and interactive way.

The Medical Directors’ Platform has launched the conversation on improving collaborative leadership. It followed the recognition that the current OCs’ centralised Medical Departments model does not fully meet the field support needs. How do we want to structure the medical expertise in the movement? Do we want to review or rebalance the programme design, strategic and support functions? Can we strengthen mutualisation, per theme or per region? This conversation will take place between now and the end of the year. To succeed, we need to reach field staff and communities.

I also would like to mention some recent positive experiences in the support we provide. The Biomed/Medical Equipment Support Unit has successfully been implemented as a transversal unit between the Log (hosting the unit), the Supply and the Medical Department. The Middle East Medical Unit (MEMU), based in Beirut, is now a well-established partner, notably on anti-microbial resistance, but not only. The Hospital Management Support Unit went through a reboot and is eager to be back online. The Digital Health Promotion Unit (in partnership with OCA) is now five months into its pilot year, with very promising results. We are collaborating on a project to look at the structure, the governance and the roles and responsibilities in the interaction between the Pharma Unit and the Supply Department. Since January, we have a community of practice manager working hard to support new Communities of Practice (CoPs) and a patient safety incident focal point who developed a new policy for what is clearly identified as a priority.
I would like to thank all those who designed and implemented these medical activities in the field for patients and communities, those who helped collect and manage the data in the report, those who turned data into chapters, information to share, lessons to learn and inspiration for the future and those who reviewed and edited those chapters and made this extraordinary MSF OCB 2020 Medical Activity Report.

I encourage you to read this report, to challenge your assumptions and learn, to reach out to the authors, to always push us to do more and to continuously improve the care we deliver.

This was my fifth and last Medical Activity Report. It has been an honour to serve as MSF Medical Director for all these years.

Over and out,

Sebastian Spencer
Medical Director
EXECUTIVE SUMMARY

In 2020, Médecins Sans Frontières – Operational Centre Brussels (MSF OCB) ran 128 projects in 39 countries. Overall, 2,522,167 outpatient department (OPD) consultations were performed, of which 611,942 were for children under the age of five. There were 201,443 admissions to inpatient departments (IPD); 43,917 patients were children (1-59 months) and 8,227 were neonates.

While the COVID-19 pandemic necessitated adaptations such as online consultations, virtual field visits and webinars, MSF continued to bring medical aid to those most in need, from malaria projects in Burundi to new all-oral regimens for drug-resistant tuberculosis (DRTB) in countries including Ukraine and Iraq to patient-centred care for survivors of torture (SoT). In addition, OCB received the most COVID-19 patients among MSF’s five operational centres, with 27,800 reported cases in 26 countries.

Apart from COVID-19 activities, some major responses for OCB in 2020 included: i) the continued measles vaccination campaign in the Democratic Republic of the Congo (DRC); ii) reactive and innovative responses to viral haemorrhagic fevers like Ebola virus disease (DRC) or Lassa fever (Nigeria); iii) the continuation of the Mocha project with stabilisation trauma in Yemen and iv) the first full year of operation of two paediatric inpatient departments in Kenema, Sierra Leone and Niono, Mali. Geographically, activities in sub-Saharan Africa remained at the core of MSF OCB interventions (Figure).

In 2020

- 546,189 doses of vaccines were given
- 223,653 cases of confirmed malaria were treated
- 71,697 deliveries performed; 7035 of these by Caesarean section
- 78,363 individual mental health sessions were conducted
- 17,929 surgical interventions were undertaken
- 5572 victims of sexual violence accessed care
- 1362 cases of drug-resistant tuberculosis were diagnosed and treated

FIGURE Global OCB sections and missions, 2020
# LIST OF ABBREVIATIONS

<table>
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<tr>
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<th>Description</th>
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<tr>
<td>ABR</td>
<td>Antibiotic Resistance</td>
</tr>
<tr>
<td>ACT</td>
<td>Artemisinin-based Combination Therapies</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>ALS</td>
<td>Average Length of Stay</td>
</tr>
<tr>
<td>ALSO</td>
<td>Advanced Life Support in Obstetrics</td>
</tr>
<tr>
<td>AMR</td>
<td>Antibiotic Resistance</td>
</tr>
<tr>
<td>APU</td>
<td>Amsterdam Procurement Unit</td>
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<tr>
<td>ANC</td>
<td>Antenatal Care</td>
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<td>ARI</td>
<td>Acute Respiratory Infection</td>
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<tr>
<td>AS</td>
<td>Antibiotic Stewardship</td>
</tr>
<tr>
<td>AVM</td>
<td>Abortion-related Morbidity and Mortality in Fragile and Conflict-affected Settings</td>
</tr>
<tr>
<td>BCG</td>
<td>Bacille Calmette Guérin (TB vaccination)</td>
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<tr>
<td>BLoC</td>
<td>Basic Logistics Course</td>
</tr>
<tr>
<td>BEmONC</td>
<td>Basic Emergency Obstetric and Neonatal Care</td>
</tr>
<tr>
<td>bOPV</td>
<td>Bivalent Oral Polio Vaccine</td>
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<td>BPAP</td>
<td>Bilevel Positive Airway Pressure</td>
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<tr>
<td>BStU</td>
<td>Biomedical Service Unit</td>
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<tr>
<td>CAR</td>
<td>Central African Republic</td>
</tr>
<tr>
<td>CATi</td>
<td>Case-Area Targeted Interventions</td>
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<tr>
<td>CD</td>
<td>Cleaning and Disinfection</td>
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<tr>
<td>CDC</td>
<td>Centre for Disease Control and Prevention</td>
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<tr>
<td>CEH</td>
<td>Climate, Environment and Health</td>
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<tr>
<td>CEmONC</td>
<td>Comprehensive Emergency Obstetric and Neonatal Care</td>
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<tr>
<td>CF</td>
<td>Case Fatality Rate</td>
</tr>
<tr>
<td>CHW</td>
<td>Community Health Worker</td>
</tr>
<tr>
<td>CLASSi</td>
<td>Central Line-Associated Bloodstream Infection</td>
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<td>CNCD</td>
<td>Chronic Non-Communicable Disease</td>
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<td>CoNS</td>
<td>Coagulase negative Staphylococcus</td>
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<tr>
<td>CoP</td>
<td>Community of Practice</td>
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<td>CPAP</td>
<td>Continuous Positive Airway Pressure</td>
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<td>CPOC</td>
<td>Comprehensive Post-Operative Care</td>
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<td>CPT</td>
<td>Cognitive Processing Therapy</td>
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<td>CrAg</td>
<td>Cryptococcal Antigen</td>
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<tr>
<td>CS</td>
<td>Caesarean Sections</td>
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<td>CSH</td>
<td>Commercial Sex Worker</td>
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<td>CTC</td>
<td>Cholera Treatment Centre</td>
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<td>DAA</td>
<td>Direct-Acting Antivirals</td>
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<td>DBS</td>
<td>Dry Blood Spot</td>
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<td>Daily Defined Dose</td>
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<td>District Health Information Software 2</td>
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<td>DOC</td>
<td>Direct Obstetric Complications</td>
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<td>Declaration of Equivalence</td>
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<td>Drugs for Neglected Diseases Initiative</td>
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<td>DRC</td>
<td>Democratic Republic of the Congo</td>
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<td>DRTB</td>
<td>Drug-Resistant Tuberculosis</td>
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<td>Disease Surveillance and Notification Officer</td>
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<td>DST</td>
<td>Drug Susceptibility Testing</td>
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<td>Drug-Sensitive Tuberculosis</td>
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<td>Diphtheria-Tetanus-Pertussis</td>
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<tr>
<td>ECTC</td>
<td>Extended Controlled Temperature Chain</td>
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<td>ED</td>
<td>Emergency Department</td>
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<td>EMR</td>
<td>Electronic Medical Records</td>
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<td>EPI</td>
<td>Expanded Programme on Immunisation</td>
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<td>E-Unit</td>
<td>Emergency Unit</td>
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<td>EVD</td>
<td>Ebola Virus Disease</td>
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<td>Fixed-Dose Combination</td>
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<td>Group of Hunan</td>
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<td>Human African Trypanosomiasis</td>
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<td>HBV</td>
<td>Hepatitis B Virus</td>
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<td>Hepatitis C Virus</td>
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<td>Health Zone</td>
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<td>Hypertension</td>
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<td>ID</td>
<td>Identification</td>
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<td>ICM</td>
<td>Integrated Community Case Management</td>
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<td>ICR</td>
<td>International Committee of the Red Cross</td>
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<td>Information and Communication Technologies</td>
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<td>Intensive Care Unit</td>
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<td>IDP</td>
<td>Internally Displaced People</td>
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<td>IFR</td>
<td>International Federation of Red Cross and Red Crescent Societies</td>
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<td>Ig</td>
<td>Immunoglobulin</td>
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<td>IITT</td>
<td>Integrated Interagency Triage Tool</td>
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<td>IM</td>
<td>Integrated Management of Inpatient Malnourished children</td>
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<td>IP</td>
<td>Intimate Partner Violence</td>
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<td>IPv</td>
<td>Inactivated Polio Vaccine</td>
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<td>IRFFG</td>
<td>International Reference Field Functioning Grid</td>
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<td>IRS</td>
<td>Indoor Residual Spraying</td>
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<td>Abbreviation</td>
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<tr>
<td>VC</td>
<td>Vector Control</td>
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<td>Vaccination Coverage Survey</td>
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<td>Venezuela Intersectional Supply Unit</td>
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<td>VL</td>
<td>Viral Load</td>
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<td>Victims of Ill-treatment and Torture</td>
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<td>VoT</td>
<td>Victims of Torture</td>
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<td>VPD</td>
<td>Vaccine-Preventable Disease</td>
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<td>VSB</td>
<td>Venomous Snakebite</td>
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<td>WAAW</td>
<td>World Antimicrobial Awareness Week</td>
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<td>Water, Sanitation and Hygiene</td>
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<td>WatSan</td>
<td>Water and Sanitation</td>
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<td>WFP</td>
<td>World Food Programme</td>
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<td>Working Group</td>
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<td>WGS</td>
<td>Whole Genome Sequencing</td>
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<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WWUD</td>
<td>Women Who Use Drugs</td>
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<td>YF</td>
<td>Yellow Fever</td>
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The year 2020 has been marked by the unprecedented global health crisis caused by the COVID-19 pandemic. At the time of writing, there have been more than 158 million cases of COVID-19 and 3.28 million deaths worldwide. After the remarkably rapid development and approval of several vaccines, some using novel messenger RNA technology, vaccination campaigns have begun around the world. However, it must be noted that the majority of vaccines so far administered have been in wealthy countries, and millions of people in low and middle-income countries in Africa and Asia may not be vaccinated for several years. To quote a recently popularised global health slogan, “no one is safe until everyone is safe.” Access to COVID-19 vaccines must be expanded in order to truly tackle the pandemic.

As expected, the COVID-19 crisis has had a significant impact on all the activities conducted by Médecins Sans Frontières (MSF) Operational Centre Brussels (OCB). Although the pandemic necessitated adaptations such as online consultations, virtual field visits and webinars, MSF continued to bring medical aid to those most in need. In 2020, OCB reported nearly 60,000 COVID-19 patients in outpatient care and more than 4,500 patients treated as inpatients. Critical care, the clinical management of patients who are at risk of or have sustained potentially life-threatening failure of one or more organ systems, was provided in 20 field projects in 2020. This included six established projects that continued to provide critical care for trauma, obstetrics, paediatrics and advanced HIV disease. There was also a rapid escalation of critical care activities and a total of 14 new projects were opened during the year, with a focus on COVID-19 and implementation of basic and advanced respiratory support. In addition, global COVID-19 activities focused on providing medical care and assistance to vulnerable people, including remote communities, people on the move, homeless people, and the elderly.

For months during the pandemic, people have been forced to isolate and physically distance themselves from their friends and family. The loneliness felt endless. The new, unknown virus made people fearful and anxious. There was heartache and grief over lost loved ones, sadness over missed opportunities, fatigue and boredom faced with restrictions, but also hopefulness for a vaccine. The pandemic not only had an impact on people’s physical health, but seriously affected mental health. In response, MSF interventions specific to COVID-19 were integrated into already-existing mental health programmes, and the number of patients benefitting from mental health counselling sessions increased substantially.

Moreover, there was a steady increase in the number of OCB projects with a clear Health Promotion (HP) component and high demand for HP support, largely related to the COVID-19 pandemic. Different initiatives, such as peer exchange through webinars and digital platforms, as well as a new Knowledge Base and HP Community of Practice platform, helped to increase OCB’s capacity to support the field. The creation of a Digital Health Promotion (DHP) unit was successful; its interventions reached over 25 million people and resulted in more than 120 million views of HP messages. The DHP unit will be maintained in order to guarantee continued support to the field.

Throughout the year, OCB continued to provide quality primary and specialised patient-centred medical care to those who needed it. In 2020, MSF saw the first full year of operation of three paediatric inpatient departments in Kenema, Sierra Leone, Niono, Mali, and in Yei, South Sudan while a project offering surgical care near the frontline was taken over from Operational Centre Paris (OCP) in Mocha, Yemen, providing stabilisation trauma care. OCB also opened a project in Muyinga, Burundi to treat ulcers of unknown cause, while the project in Doro was reduced and the project in Pibor, South Sudan, was closed.

Reactive and innovative responses to viral haemorrhagic fevers like Ebola virus disease (EVD) in the Democratic Republic of the Congo (DRC) or Lassa fever in Nigeria were also important priorities. Part of MSF’s response to the Ebola outbreaks in the DRC involved the set-up of smaller, decentralised Ebola treatment centres in the
health zones, allowing for faster isolation of EVD cases, contributing to improved control of new transmission chains and reducing the need for patient transportation. In Abakaliki, Nigeria, despite a significant increase in the number of identified and treated Lassa fever cases, there were no infections among the staff, demonstrating good compliance to infection prevention and control measures (IPC).

Despite the COVID-19 pandemic, measles vaccination campaigns were still conducted in Mali, DRC, and the Central African Republic (CAR), and routine vaccination activities continued in countries including Bangladesh, Guinea, Greece, India, Lebanon, Syria and Venezuela.

But even with the spread of COVID-19, tuberculosis (TB) cannot be forgotten. Access to TB care was heavily affected by the pandemic, resulting in reduced access to diagnosis and treatment. MSF projects made huge efforts to mitigate this impact by adapting provision of TB care to COVID-19 affected settings. Drug-resistant TB (DRTB) care remained a focus in 2020, with growing attention given to children in India and South Africa, and to new all-oral regimens across several countries, including Ukraine and Iraq. TB remained the biggest killer among People Living with HIV and efforts to ensure early detection and treatment in HIV projects continued.

OCB left Malawi after more than 30 years, further reducing the number of vertical HIV and key population projects and MSF operations in Southern Africa to focus more on the low prevalence and low coverage area in Central and West Africa; it was the first full year of our return to the Hôpital Communautaire in Bangui to treat advanced HIV disease. In addition, the COVID-19 pandemic severely disrupted HIV services, slowed down progress, and reversed existing gains. Fewer people were tested for HIV, diagnosed HIV positive and started on antiretroviral treatment (ART), more patients interrupted treatment, and fear of COVID-19 led to decreased hospitalisation and consultations. This will inevitably lead to more invisible AIDS deaths in the community. Operational changes are needed to address the needs of neglected HIV populations: children, adolescents, pregnant women, key populations and others.

Despite the multiple challenges posed by the pandemic, essential Sexual and Reproductive Health (SRH) services continued throughout the year. All supported maternities remained open to provide obstetric and neonatal care, safe abortion care, contraceptive care and sexual violence services. With the closure of the Gutu project in Zimbabwe, new initiatives must build further on cervical cancer experiences of the past few years. There was a steep increase in the number of women supported for safe abortion care (SAC) and innovative community models were developed.

Multidisciplinary approaches must also continue to be adopted. Antibiotic resistance (ABR) is a serious threat to global public health and a priority in the global health agenda. ABR activities are transversal in nature, and a multidisciplinary approach is already being used in MSF, focusing on the three main pillars of Infection Prevention and Control (IPC), Antibiotic Stewardship (AS) and Microbiology, while including Health Promotion (HP), Analysis and Advocacy, Monitoring and Surveillance, Operational Research, Vaccination and Environmental Health (EH).

Furthermore, in the domain of Operational Research, the new research framework was further implemented to better structure OCB’s operational research efforts and to assure that the research efforts respond to the operational priorities of MSF, are feasible and are adequately resourced. The Luxembourg Operational Research Unit (LuxOR) and Southern Africa Medical Unit (SAMU) also provided continuous support to epidemiology and data management in the field, and set up a community of practice (CoP) to encourage peer discussions and support.

Partnerships with different programmes and organisations were also further developed in 2020. For example, in collaboration with Humanity & Inclusion and the Karolinska Institute, a multi-country research project on assessing functional outcomes of trauma patients in humanitarian settings was carried out. Epicentre also continued to conduct research on Abortion-related Morbidity and Mortality in Fragile and Conflict-affected settings (AMoCo) with Ipas and the Guttmacher Institute.

Attention to improving and standardising the quality of care in OCB projects continued in 2020: standard operational procedures, guidelines and protocols were revised, streamlined and published, and the value and service afforded by interdisciplinary and online platforms was realised in multiple areas, particularly given the massive reliance on the Internet during the pandemic. (It has also been noted that it is indeed possible to look good just from the waist up during all webinars and meetings.) And in order to ensure intersectional coherence,
intersectional working groups and numerous technology-facilitated trainings were held across different medical domains.

Finally, 2020 was also the International Year of the Nurse and Midwife, and during the COVID-19 crisis, the contribution of nurses and allied nursing staff on quality of care has never been more apparent or outstanding, demonstrating it is essential to have the right nurses with the right skills and knowledge in the right place at the right time.

**CHALLENGES AND PROSPECTS**

In 2020, MSF OCB conducted its regular medical programmes while addressing the challenges caused by COVID-19 and providing medical care to the most vulnerable. Some operations were sorely unprepared for the pandemic in many ways. There were communication gaps, and travel restrictions meant that field visits and trainings were either cancelled or postponed.

However, reduced mobility has also led to new ways of working, using virtual meetings that became more inclusive and frequent with the progression of the pandemic. Indeed, COVID-19 has highlighted the need to be innovative and flexible with MSF programmes. Teams have had to adapt their service provision and adopt different models of care in order keep services accessible during the pandemic. In spite of these challenges, MSF remains committed to person-centred, high-quality care.

COVID-19 will likely continue to pose challenges for MSF and the entire world for many years to come. Looking forward, however, it will also be important to consider the impact that the climate crisis will have on medical care. Climate change can have, and already has made, a concrete impact on MSF activities. For instance, extreme weather events like floods can prevent people from accessing care; droughts or locust infestations can lead to malnutrition; changing weather patterns can lead to new outbreaks of vector-borne diseases like malaria; increased pollution can cause breathing problems or poisoning.

Many Climate, Environment and Health (CEH) research subjects are interdisciplinary and touch on other domains (such as vector-borne diseases, nutrition, or antimicrobial resistance). It will be key to promote new, holistic research in the CEH domain in the future, as well as to emphasise how CEH is transversal and connected to other fields in public health, including MSF interventions.

An example of how the climate crisis has affected MSF activities was seen in Mozambique. In response to population displacement in Cabo Delgado following armed conflict and the recent cyclones, aggravated by inadequate local water sources, cholera and COVID-19, integrated Environmental Health interventions were set up. These included provision of water and sanitation, hygiene kit distribution and setting up of community health clubs. Thirty-six groundwater sources were rehabilitated and two new ones constructed in 2020 through project-to-project support from the ZimHub.

In addition, despite restrictions linked to the pandemic, the mass campaign of indoor residual spraying for malaria control in Burundi was successfully completed, protecting 97% of the at-risk population. However, OCB is facing long-term projects with an unacceptably high malaria burden. A comprehensive approach based on vector control, pharmaceutical prevention and optimised accessible care, with “accelerator strategies” like mass drug administration (Integrated Community Control of Malaria (ICCM)) combined with other components have already begun in Kouroussa (Guinea), Niono (Mali) and Gorama Mende, Sierra Leone. More malaria development is planned for 2021.

Other priorities for 2021 and beyond include an increased response capacity to COVID-19 and other epidemics, the opening of the trauma centre in Kunduz, Afghanistan (delayed due to the pandemic), the opening of a project for advanced HIV disease in Severodonetsk, Ukraine and the decentralisation of HIV care in Bangui, CAR, the opening of a prison project focused on TB in Rio de Janeiro, Brazil and a project focused on paediatric care in the region of Timbuktu, Mali. Increased emphasis will focus on increasing access to microbiology in order to address antibiotic resistance. There will also be a focus on child health, such as addressing missed vaccination opportunities, nutrition, non-communicable diseases, adolescent sexual and reproductive health, as well as HIV and TB care and a focus on how we can better treat the survivors of torture and extreme violence in our projects.
Despite much of the uncertainty that surrounds the future of COVID-19, MSF will need to continue to provide effective care for patients that are critically ill. Innovative ways will need to be explored to meet these needs, especially in low-resource contexts.

The field recentralisation initiative will be continued, with the aim of empowering the field and giving more space to national staff in decision-making positions to help serve the communities where MSF is present. Regionalisation and the approach of a networked operational centre are among prospects for the near future.

Faced with the continuation of the global pandemic in 2021, new tools and new ways of working will be needed in order to provide the highest quality of medical care. OCB stands ready to overcome challenges and continue working in complex settings, using adapted and integrated models of care to help people and operational research to improve its programmes.
ANTIBIOTIC RESISTANCE

KEY FACTS IN 2020

- Many aspects of the Antibiotic Resistance (ABR) package implementation were delayed due to shifting priorities of projects in response to COVID-19.
- Access to microbiological culture testing was consolidated and introduced in new projects.
- More projects started to use the Stepwise Infection Prevention and Control Approach (SIPCA) auditing tool.
- New ABR Infectious Diseases Referent started in late 2020.

1. OVERVIEW

Antimicrobial resistance (AMR), and more specifically antibiotic resistance (ABR), is a serious threat to global public health and a priority in the global health agenda. ABR activities are transversal in nature, and a multidisciplinary approach is used in MSF, including Infection Prevention and Control (IPC), Antibiotic Stewardship (AS) and Microbiology, Health Promotion (HP), Analysis and Advocacy, Monitoring and Surveillance, Operational Research (OR), Vaccination and Environmental Health (EH).

In 2020, the MSF ABR Task Force finished its mandate as the COVID-19 pandemic shifted project priorities. Nevertheless, ABR activities in Operational Centre Brussels (OCB) continued focusing on hospitals (inpatient departments), with a push for increased access to microbiology diagnostics. The recruitment of the ABR Infectious Diseases Referent brought renewed vigour to the topic and the ABR Circle was restarted. The Middle East Medical Unit (MEMU) was fully staffed for the first time since its creation and a strategy will be developed to focus on how the Unit can engage with ABR across OCB.

2. MAIN PROGRAMME ACTIVITIES

2.1. ANTIBIOTIC STEWARDSHIP

Many MSF projects were transformed into COVID-19 units, which changed their priorities. The Antibiotic Stewardship Intersectional Group responded to the changing nature of many projects by piloting a guideline for antibiotic stewardship, with routine updates as new evidence was generated. In spite of COVID-19 priorities, stewardship programmes kept running with varying complexity in Mosul (Iraq), Gaza (Palestine), Bar Elias...
(Lebanon), Kinshasa (Democratic Republic of the Congo (DRC)), Khost (Afghanistan) and Castor (Central African Republic (CAR)).

2.2. INFECTION PREVENTION AND CONTROL

Infection prevention and control (IPC) is an important element for the ABR package; it is a practical solution designed to prevent harm caused by infection transmitted in hospital settings from hospital staff to patients, from patients to patients, and infection acquired by health workers during their duties.

In collaboration with the ABR referent, the Microbiology referent and others, support was provided to projects to reinforce IPC measures as the first pillar to prevent healthcare-associated infections (HAIs). Continuous IPC monitoring was implemented based on defined criteria by recruiting an IPC supervisor/IPC manager. The team supported responses to HAI outbreaks in Gaza (Palestine), Castor (CAR), and in Burundi for ulcerous wounds in Muyinga and Muranvia.

A surgical site infection (SSI) toolkit with the SSI prevention bundle and guidelines for microbiological environmental sampling were drafted in 2020 and are in process for final versions to be released in 2021.

The use of the Stepwise Infection Prevention and Control Approach (SIPCA) audit tool by all projects with an inpatient department (IPD) at least once a year remained a goal despite the challenges and the focus of every project on the pandemic. By the end of 2020, we launched an intersectional discussion to improve the implementation and the use of the SIPCA tool. It included an intersectional review, translation of the tool into Arabic, Portuguese and Spanish, webinars being made available to the field, and MedOps given individual support.

2.3. MICROBIOLOGY

WHONET is a microbiology laboratory database software supported by the World Health Organization (WHO). Currently Mosul (Iraq), Kinshasa (DRC) and Palestine (Gaza) are using this software to monitor all microbiology data.

MOSUL, IRAQ

The Mosul Project suspended surgical activities in early 2020 due to transport constraints (road closures) that prevented sending samples to Erbil. The project team restarted surgical activities in September, and the number of cases were similar to the past. The prevalence of organisms and their resistance patterns did not change significantly from the previous year—methicillin-resistant *Staphylococcus aureus* (MRSA), was first on the list, followed by *Enterobacteriaceae*, *Pseudomonas aeruginosa* and *Acinetobacter baumannii*. Of the total population of *S. aureus* detected in our patients, 100% were MRSA.

**FIGURE 1** Distribution of organisms isolated in 2020 from the Mosul, Iraq project
KINSHASA, DRC

The MSF microbiology laboratory was established at the end of 2020, but validation was postponed until 2021 as not all laboratory consumables had arrived. Samples continued to be sent to the HJ-Laboratory and this arrangement will continue until the MSF laboratory is validated.

The prevalence of isolated organisms did not change considerably from 2019-2020; the Salmonella genus was the most frequent bacteria isolated at the Centre Hospitalier de Kabinda (CHK) after Coagulase Negative Staphylococcus (CoNS). The Salmonella species most often isolated were S. enteritidis, S. typhimurium, and S. typhi. Ampicillin and cotrimoxazole are no longer effective in more than 80% of isolates and a similar scenario was found for fluoroquinolones with resistance over 50%.

![FIGURE 2  Distribution of microorganisms isolated from blood culture in Kinshasa HIV project 2019-2020](image)

GAZA, PALESTINE

The MSF microbiology laboratory was established at the end of 2020, but validation was postponed until 2021 as not all laboratory consumables had arrived. Samples continued to be sent to the MSF Operational Centre Paris (OCP)-Laboratory and this will continue until the OCB laboratory is validated. It is not a surprise to find MRSA as the most commonly isolated organism, when it is reported by several studies having a prevalence of 25.5% carrier status in all healthcare staff. On the other hand, the increase in CoNS was considerable, from 12.7% in 2019 to 32.9% in 2020.

![FIGURE 3  Distribution of microorganisms isolated from samples taken at the Gaza project 2019-2020](image)
The proportion of isolates that were multi-drug resistant (MDR) was similar in Gaza and Mosul; however, Mosul (Iraq) had a higher prevalence of MRSA and Kinshasa (DRC) had a high prevalence of Salmonella spp with high resistance to fluoroquinolones and 3rd generation cephalosporins.

**FIGURE 4** Proportion of isolates that are resistant as reported from the three MSF projects 2020

### 2.4. OPERATIONAL RESEARCH

Whilst research activities continued, there were not many publications in 2020. The Bar Elias project presented a poster at the European Congress of Clinical Microbiology & Infectious Diseases (ECCMID) conference, titled “Implementing an Antibiotic Stewardship Programme without increasing the surgical site infection rate in a high antibiotic resistant setting.” The planned ABR SORT-IT course (Structured Operational Research and Training Initiative) was postponed to June 2021.

### 2.5. HEALTH PROMOTION

The Health Promotion Strategic Guidance Paper for ABR interventions was finalised in 2020 and a webinar discussing the Health Promoter role in tackling ABR was presented. The HP team commemorated the World Antimicrobial Awareness Week (WAAW: 18-24 November) across several projects.

### 2.6. ABR CIRCLE

The ABR Circle restarted in late 2020 with a re-evaluation of its purpose and broader inclusion of core members.

### 3. ANALYSIS AND ADVOCACY

During 2020, several activities took place regarding analysis and advocacy for ABR in OCB. To better inform advocacy efforts and to have adapted responses to the multiple challenges posed by ABR in different contexts, MSF conducted three country case studies in priority settings – Central African Republic, Gaza Strip (Occupied Palestinian Territories) and Nigeria. The studies were performed using quantitative and qualitative tools to better understand the extent of the problem and the challenges to fight AMR from a health policy perspective. As a result, a Road Map for each country was established for advocacy and positioning for the missions and internationally. Every Road Map was tailored to the most important country needs. This effort provided the ABR analysis and advocacy portfolio with a rich and diverse group of settings. Thus, MSF has a great opportunity to capitalise on different experiences with tailor-made responses to the different needs. Individual reports and a general overview, including the ambitions on advocacy for AMR/ABR, were disseminated.
Towards the end of the year and after the end of the mandate of the task force, the group on analysis and advocacy for AMR was relaunched under specific terms of reference. This group was led by the analysis department in collaboration with the Access Campaign, and aims to support MSF positioning, operations and advocacy at the global level.

A presentation at the Global Health Actors Network (GHAN) on AMR and COVID-19 was carried out, reaching several missions and opening interesting discussions.

**4. LOOKING BACK AND AHEAD**

**4.1. LESSONS LEARNED IN 2020**

- Importance of close follow-up with projects regarding surveillance performed for antibiotic stewardship.
- We need to work closely with Human Resources (HR) to improve conditions for the physicians acting as Antibiotic Stewardship Focal Points to prevent them from losing interest in the long run.
- Nationalising many of the positions maintains continuity of programmes, especially with the turnover of international staff and in preparation for when MSF leaves.
- We need to be innovative and flexible to customise our stewardship programmes according to the changing environment as happened with COVID-19.
- There are challenges finding microbiologists with adequate experience for the pool.

**4.2. PROSPECTS FOR 2021**

- Open a new MSF microbiology laboratory in Kenema for blood cultures.
- Improve access to microbiology laboratory services as part of the holistic approach to HIV-TB patients and for surgical and non-surgical interventions for acute and chronic trauma.
- Invest more in MSF-run microbiology laboratories: Kinshasa (DRC), Gaza (Occupied Palestinian Territories); support the microbiology laboratory at Central Public Health Laboratory (CPHL) in Kabul (Afghanistan-intersectional)
- Release the SSI toolkit with the SSI prevention bundle, including guidelines for microbiological environmental sampling.
- Work on introducing the ABR package (full and minimal) in Kenema (Sierra Leone), Conakry (Guinea), Castor (CAR), Beira (Mozambique), Maiduguri (Nigeria), Kunduz (Afghanistan) and Port-à-Piment (Haiti)
- Introduce antibiotic stewardship in outpatient departments at Masisi (DRC) and others, if possible.
- Try to implement a new policy for antibiotic funding donations to MSF while making sure that these donations respect our values.
- Conduct an ABR SORT-IT course in June 2021.
CRITICAL CARE

KEY FACTS IN 2020

- Critical care, the clinical management of patients who are at risk of, or have sustained potentially life-threatening failure of one or more organ systems was provided in a broad range of projects and clinical contexts.

- Critical care was delivered in 20 field projects across 12 countries, of which 14 were new locations in 2020.

- Specialised critical care activities within field projects included a focus on COVID-19 and implementation of advanced respiratory support. MSF OCB’s response to the COVID-19 pandemic included 14 new critical care interventions in eight countries.

- Established projects in six countries continued to provide critical care for trauma, obstetrics, paediatrics and advanced HIV disease.

- Training courses in basic critical care for advanced HIV disease were provided for medical and nursing staff in Kinshasa.

1. OVERVIEW

Critical care medicine seeks to provide for the needs of patients of all ages who have suffered, or are at risk of suffering, potentially life-threatening dysfunction of one or more organ systems. It includes organ system support and the investigation, diagnosis, and treatment of acute illnesses. Patient safety, medical ethics, end-of-life care, and support of families are all essential to the delivery of effective critical care.

Critical illness may complicate a broad range of clinical conditions. A basic package of essential emergency and critical care is a central element of universal care and should be available to all critically ill or injured patients in MSF projects.

The response to the COVID-19 pandemic demanded a rapid escalation of critical care activities and a total of 14 new projects were opened during the year, in eight different countries over four continents. This was achieved in the context of global shortages of trained human resources, oxygen supplies and specialised biomedical equipment.

Provision of critical care for trauma, obstetrics, paediatrics and advanced HIV disease continued in established projects. This care continued in many projects despite a general reduction in admissions due to COVID-19.
2. MAIN PROGRAMME ACTIVITIES

2.1. CRITICAL CARE UNITS

A Critical Care Unit (also called Intensive Care Unit (ICU)) is a centralised, distinct area within a medical facility, that is specifically staffed and equipped to provide care for critically ill or injured patients. A transversal approach to patient care is offered by an independent, multidisciplinary team of doctors, nurses and allied health professionals with specific training and skills.

MSF Operational Centre Brussels (OCB) provided critical care activities in health facilities managed by MSF, but also supported critical care in facilities managed by local Ministries of Health (MoH) or other healthcare organisations. During 2020, MSF OCB delivered or supported critical care in 20 projects across 12 countries (Figure 1). This included 14 new interventions as part of the COVID-19 response.

Of the COVID-19 interventions, OCB has now ended its participation in nine projects that continue to be managed by the local MoH or another healthcare organisation (Aden, Yemen; Boa Vista, Manaus, Sao Paulo, Brazil; Kinshasa, Democratic Republic of the Congo (DRC); Lodi, Italy; Butterworth, Gqeberha, KwaZulu-Natal, South Africa). Two projects in temporary field hospitals have closed (Khayelitsha, Gqeberha, South Africa).

2.2 COVID-19 CRITICAL CARE ADMISSIONS AND OUTCOMES

Admission data for critical care was only available for four COVID-19 projects: Aden, Yemen; Baghdad (OCB/Operational Centre Paris co-managed), Iraq; Bar Elias, Lebanon; Kinshasa, DRC. Based on the four facilities, there were 723 critical care admissions worldwide of whom 515 (71%) were for basic critical care and 208 (29%) were for advanced critical care (Figure 2a).
Basic critical care intervention data (Figure 2b) was available for 309 patients, of whom 60% received oxygen with a single source via a nasal cannula, simple face mask, or non-rebreather mask providing a flow <20 L/min. Thirty-seven percent of patients received oxygen via two sources at the same time with a non-rebreather mask (NRM) plus regular nasal cannula (NC) to provide flow >20 L/min; this represented the highest level of respiratory support for basic critical care. The double oxygen set-up, in addition to prone positioning, successfully treated some patients with COVID-19, avoiding the need for advanced respiratory support. In Aden, Yemen, it was used in 77% (93/121) of patients who were not transferred to the advanced ICU (either due to a lack of ICU beds or transfer was not considered appropriate), of whom 40% (37/93) survived to hospital discharge. High flow nasal oxygen (HFNO) is an advanced respiratory support, which can provide oxygen flows of 40-60 L/min, but was only available in one project and used in 3% of patients for stabilisation prior to referral to a more advanced ICU.

Advanced critical care data (Figure 2c) was available for 208 patients, of whom 14% received high flow nasal oxygen, 63% received non-invasive ventilation (Bilevel Positive Airway Pressure (BPAP) or Continuous Positive Airway Pressure (CPAP)), and 23% received intubation/invasive mechanical ventilation.

Outcome data of 528 critically ill COVID-19 patients demonstrated a 39% survival to hospital discharge; 10% were still admitted to the hospital at the time of data recording, 9% were referred to another health facility, 38% died, and 4% left against medical advice (Figure 3a). A total of 309 patients received basic critical care, of whom 51% survived to hospital discharge, 10% were admitted to the hospital at the time of data recording, 11% were referred to another health facility, 23% died, and 5% left against medical advice (Figure 3b). Altogether, 208 patients received advanced critical care, of whom 25% survived to hospital discharge, 8% were admitted to the hospital, 4% were referred to another health facility, 60% died, and 3% left against medical advice (Figure 3c). The high crude mortality rate provides an incomplete picture of outcomes, as the quality of care improved over time when new critical care projects were started. Additionally, there were important secondary benefits from introducing critical care. Patients inside and outside of the ICU benefited over time due to an increase in knowledge and awareness from monitoring, an increase in staff skills, and the ability to provide a higher level of care. Multidisciplinary teamwork was strongly encouraged in the ICU and this effect extended to the ward. Furthermore, critical care outreach (where the dedicated ICU team co-manages ward patients) was adopted in several projects contributing to the early detection of critical illness and prevention of organ failure.
FIGURE 3 Outcome proportion for all (a) critical care COVID-19 patients, (b) basic critical care COVID-19 patients, and (c) advanced critical care COVID-19 patients in four projects with critical care activities in 2020.

2.3 COVID-19 CRITICAL CARE IN SOUTH AFRICA

The COVID-19 strategy in South Africa combined the opening of temporary field hospitals with the support of Department of Health district hospitals. All facilities provided basic critical care.

In Khayelitsha, Cape Town, MSF opened a 60-bed field hospital in a sports centre adjacent to a district hospital. Oxygen was provided by oxygen concentrators and bedside cylinders, with sufficient capacity to provide double source oxygen (non-rebreather mask together with nasal cannula). Awake prone positioning was widely implemented.

After the closure of Khayelitsha, some of the clinical team relocated to support a district hospital in the Eastern Cape (Butterworth Hospital), and provided support to the Eshowe team in KwaZulu-Natal (Eshowe Hospital, Mbolongwane Hospital, Catherine Booth Hospital). In all of these hospitals, MSF supported basic critical care with human resources, oxygen concentrators, training and bedside supervision of clinical activities including optimising oxygen delivery, prone positioning, management of comorbidities and medical complications.

The second wave of COVID-19 in South Africa began in mid-November 2020 and health systems were rapidly overwhelmed. MSF deployed nurses and doctors to two COVID-19 sites in Gqeberha (formerly Port Elizabeth), specifically, a 200-bed field hospital in a decommissioned factory and a 70-bed area in the basement of a tertiary hospital. Both sites were well equipped with a central O₂ network and were able to provide basic critical care and High Flow Nasal oxygen. HFNO₂ was widely implemented by the Department of Health at all levels of care and the hospital basement facility provided HFNO₂ for 65 patients between late November and the end of 2020.
2.4 CRITICAL CARE FOR ADVANCED HIV DISEASE

Before the extent of the COVID-19 pandemic became apparent, the critical care prospects for 2020 had included a focus on development of high-quality, basic critical care for patients with advanced HIV disease. This started with short training courses in basic critical care for the medical and nursing staff of OCB’s longstanding project in Kinshasa, DRC, at the beginning of the year. Ethical decision-making in critical care and the appropriate provision of palliative and end-of-life care became a central theme of these courses, with the introduction of new guidelines and decision-making tools during the rest of the year.

Unfortunately, a planned visit to OCB’s project for advanced HIV disease in Conakry, Guinea, was postponed because of pandemic restrictions. Therefore, some alternative support to the project was provided in a series of webinars.

3. LOOKING BACK AND AHEAD

3.1. LESSONS LEARNED IN 2020

• The late presentation of patients, including those with silent hypoxia, was an issue in all COVID-19 critical care projects. It illustrates the importance of providing critical care services within a defined pathway of patient care, starting in the community with effective engagement and primary care linked to secondary/tertiary services by clear referral pathways.

• Critical care resource constraints were an ongoing challenge. There was a constant need for local purchase of specialised equipment, problems related to oxygen supplies and the compatibility of oxygen networks with biomedical equipment, lack of medications, and shortages of personal protective equipment. This required a coordinated response involving multiple departments, including biomedical specialists, pharmacists, supply and logistics. The knowledge gained and progress made will serve us well in future operations.

• Providing critical care and advanced respiratory supports for COVID-19 disease (high flow nasal oxygen, non-invasive ventilation, invasive mechanical ventilation) during a humanitarian crisis has been challenging, but was feasible when implemented with a full package of care adapted to the context. That package includes, but is not limited to, clinical staff with training and experience in critical care, allied health professionals, clinical mentoring for trainees, adequate biomedical equipment and technical support, reliable oxygen supplies, medications, and a reliable supply chain. The progress made in our ability to provide enhanced respiratory support in COVID-19 projects will translate into direct benefits for our non-COVID-19 projects.

• The majority of local staff had no or limited critical care experience and were obliged to learn quickly at the bedside. Routine principles of ICU care, such as safe use of ventilatory support and settings, use of standardised “bundles” to prevent ventilator associated pneumonia and catheter-related infections, safe use of syringe and infusion pumps and early patient mobilisation were unfamiliar. Clinical protocols (for COVID-19 and for routine ICU care) were developed and taught on-the-job. There was no previous experience with prone positioning of hypoxic patients in many of our projects, but this was successfully taught and then managed independently by local staff.

3.2. PROSPECTS FOR 2021

• Improve the quality of care for critically ill patients, by incorporating medical activities that integrate the patient care continuum from Emergency Department entry to ICU to hospital discharge.

• Develop an intersectional MSF Essential Emergency and Critical Care Policy and a Critical Care Framework/Strategic Paper, with promotion of essential emergency and critical care as the basic package of universal care that should be available to all critically ill and injured patients in MSF projects.
• Capitalise on our experiences with enhanced critical care capacity generated in the COVID-19 pandemic response in order to benefit all projects.

• Integrate the intersectional Trauma Response Policy into critical care activities with the planned opening of the new Kunduz Trauma Centre.

• Develop the provision of basic critical care for critically ill obstetric patients in new obstetric critical care units to be opened in Bangui, Central African Republic (CAR) and Kenema, Sierra Leone.

• Continue integration of palliative and end-of-life care into critical care activities.

View from the operating theatre of MSF’s Bar Elias Hospital where Kawkab (34) is getting surgery.
© Joffrey Monnier/MSF
KEY FACTS IN 2020

- Ebola Virus Disease (EVD) care is being increasingly provided in close proximity to the affected communities; however, too many unnecessary admissions are observed.
- Mixed epidemiology/health promotion teams managed to gain communities’ trust and identify ongoing transmission chains.
- Availability of two specific treatments against EVD with the potential to greatly improve patients’ outcomes, but access to them remained suboptimal.
- Vaccination was performed in “rings” around cases. Wider coverage could have created a larger public health effect and simplified vaccination activities.
- Late admissions and high numbers of community deaths highlighted, once more, the importance of high-quality surveillance and HP activities.

1. OVERVIEW

**EBOLA OUTBREAK INTERVENTION EQUATEUR PROVINCE, DEMOCRATIC REPUBLIC OF THE CONGO (DRC) (JUNE-NOVEMBER 2020)**

On the 1st of June 2020, the Ministry of Health (MoH) of the Democratic Republic of the Congo (DRC) declared a new outbreak of Ebola Virus Disease (EVD), the 11th in its territory. The outbreak occurred in Equateur Province, a province known for EVD outbreaks in the past. It lasted to the end of November 2020, spreading widely throughout the province, affecting 13 (out of 18) Health Zones (HZ). With a total of 130 EVD cases, and 55 deaths (case fatality rate (CFR) of 42.3%), it was a rather small outbreak.

After an initial investigation in early June, Operational Centre Brussels (OCB) decided to intervene in two of the more affected HZs (Bolomba and Bikoro). In a later phase, with satellite cases occurring in previously unaffected HZs, MSF OCB extended its response to two more HZs (Monieka and Lolanga Mampoko). Multiple other actors were involved in the outbreak response, with the MoH of the DRC and World Health Organization (WHO) Afro taking the lead. MSF OCB, with the most experience, chose to intervene in those domains where others were not present. The aim was to contribute to a swift control of the outbreak, while providing the best care possible to infected patients, taking into account communities’ concerns.
2. MAIN PROGRAMME ACTIVITIES

2.1. MANAGEMENT OF EVD CASES IN ONE LARGE CENTRAL EBOLA TREATMENT CENTRE (ETC) AND MULTIPLE SMALL DECENTRALISED STRUCTURES

In Bolomba HZ, MSF took the lead in the isolation and management of Ebola cases in one Ebola Treatment Centre (ETC) (40 beds). In addition, two smaller, decentralised treatment centres (eight beds) were set up in two more remote HZs that reported cases. Likewise, when the neighbouring HZ of Monieka reported a few confirmed cases, two small (“mini”) ETCs were set up there.

This decentralised approach was commonly practised in the past but has seldom been applied in large outbreaks in more recent years, when large ETCs became the norm. Small, decentralised structures permit more rapid isolation of EVD cases, contributing to improved control of new transmission “chains.” They facilitate rapid provision of care where patients present themselves, reducing the need for patient transportation, something that can be harmful to patients, pose bio-safety risks and is a big challenge in the densely forested, difficult-to-access Equateur Province.

Treating patients close to their homes is strongly believed to improve communities’ acceptance of the response, as the proximity of treatment permits greater involvement of family members in the care of their loved ones.

This decentralised approach was adopted in Bikoro, where MSF was not in charge of the large central ETC but had three small ETCs running at any one time. In total, six different small (6-8 bed) structures (mini ETCs) in close proximity to existing health structures were set up throughout the outbreak to receive suspected EVD cases. All structures offered, besides free care, free food for patients and their visitor(s).
In total, MSF OCB admitted 469 suspected EVD patients in Bolomba and Monieka HZs, with 15 being confirmed. In Bikoro HZ, 127 were admitted as suspected cases but none were confirmed.

2.2. SUPPORT FOR EVD PATIENT TRANSPORTATION

In Bolomba HZ, where the road was accessible by car, an ambulance system was set up and run by MSF OCB. For the non-accessible axes (80% of all transport axes), alternative transport means (pirogues, bikes) were used, while installing the necessary bio-safety measures. In Bikoro HZ, the ambulance was run by the MoH and supported by different actors. MSF helped with the maintenance as there were frequent breakdowns. As decentralised ETCs reduced the need for patient transport and as most transferred patients were non-cases, MSF decided not to invest further in the ambulance system.

2.3. SUPPORT FOR HEALTH STRUCTURES (HS)

In order to increase access to primary health care and facilitate the identification of suspected EVD cases, MSF OCB gave support to Health Centres (HC) and Health Posts in and around the affected Health Areas. This support consisted of donations of essential drugs (tailored to the structures needs/target population) and the provision of practical trainings to the HC staff. The main topics were screening for EVD, case detection, the correct use of infection prevention and control (IPC) measures, the installation of screening and establishing temporary isolation areas.

In Bolomba HZ, support was given to five different Health Areas, in Bikoro, 12. This support turned out to be rather crucial as these peripheral HS were very involved, though often insufficiently supported in the outbreak response. Many of them lacked essential material and drugs, even for regular medical activities. Before the support with essential drugs appeared, some patients came to the ETCs hoping to be admitted as EVD suspect cases in order to receive drugs for other conditions.

2.4. REINFORCEMENT OF COMMUNITY ACCEPTANCE AND ENGAGEMENT

Awareness sessions were provided in 14 Health Areas in Bolomba HZ and the two affected Health Areas of Monieka HZ. The focus was on connecting with and engaging community leaders and other key people living in the affected communities, creating a bond with the affected families, and providing general awareness sessions in the community.

In Bikoro, a total of 799 people attended an awareness session. By performing sessions in small groups (16 people on average), HP teams tried to create a “dialogue” with people, giving them space to ask questions or express their worries.

MSF epi-nurses joined the MoH-WHO surveillance teams for different surveillance activities, mainly the investigation of (alert) cases.

MSF OCB medical-epi and health promotion (HP) teams went out into the affected communities where they, simply by being present and actively listening to the affected families and communities, managed to increase trust and people’s acceptance for interventions such as safe burials and acceptance of admission into an ETC when needed. Those activities also allowed better access to the ongoing transmission chains, permitting the identification of “true” suspected cases, those with clear epidemiological links, who were directed to one of the ETCs for care. This plan may have contributed to the final reduction of ongoing transmission chains.

In Bolomba HZ, a geographically vast and densely forested territory, MSF OCB donated and installed two radios (with solar panels and batteries to run them) to the health authorities, reinforcing the surveillance/alert system not just for EVD, but for all diseases. Up until then, in order to raise alerts, healthcare workers had to go by foot or bicycle to Bolomba town, a time-consuming activity.
2.5. EVALUATION IN LOLANGA MAMPOKO HZ AND PREPAREDNESS FOR RAPID RESPONSE

When Lolanga Mampoko HZ, in the north of Mbandaka town, learned of a new cluster of cases (seven confirmed and three probable) at the end of September, MSF launched an evaluation, identifying the transmission chain(s) and evaluating any need for intervention.

MSF OCB teams helped to install a correct patient circuit in the local isolation unit and made donations of drugs and some essential IPC and Water, Sanitation and Hygiene (WASH) material to the most important local health structures, while providing EVD-specific trainings on IPC-WASH-biosafety, plus recognition of and screening for the disease. This cluster of cases was rapidly contained. In the last weeks of the outbreak, MSF retained the capacity to rapidly intervene in case of need, although, in the end, it was not required.

3. LOOKING BACK AND AHEAD

3.1 LESSONS LEARNED IN 2020

- Two of the main challenges were the use of a too sensitive, non-standard case definition and search-and-sweep operations (“ratissages”) as a way to actively find cases by the main partners in charge. This led to multiple unnecessary admissions to the ETCs and other isolation units1, at times exceeding bed capacity. Unnecessary admissions may put patients not suffering from EVD at risk of becoming infected with EVD. Search-and-sweep operations are often perceived by communities as aggressive, reducing their trust in and acceptance of the response, ultimately being counterproductive.

- MSF OCB took a clear position against this case definition and the search-and-sweep operations, proposing and applying a more targeted approach. In Bolomba HZ, MSF clinicians joined case investigation teams, increasing the quality of case investigation through better clinical evaluation. The installation of a screening site at the entrance of Bolomba’s general hospital was another way to reduce unnecessary admissions. The support of general health structures in the affected HZs and increased access to regular medical care very likely contributed to the reduction of unnecessary admissions into the ETCs. In Bikoro, it was mainly the HP-epi-med teams that managed to identify true suspect cases.

- Many “community deaths” due to EVD were reported2 since many EVD patients remained in the community up to the moment they died, never having been identified as an EVD case. For those EVD cases identified and admitted in an ETC, the time from the onset of symptoms to admission was generally long (5-10 days). For confirmed EVD cases admitted into the ETCs, only a minority (around 40%) were known as a “contact” of a known EVD case3; not all transmission chains were fully established.

- All of this suggests that communities’ trust, awareness or access to EVD services was not optimal and that surveillance activities, including the identification and following up of contacts, was less than adequate to detect cases.

- Surveillance activities were largely decentralised, with many tasks delegated to local health structures. While this approach placed care closer to communities, most health structures were overwhelmed trying to manage regular care along with the increase in EVD. Serious payment problems of staff only increased the problem.

- Since the 2018-2020 EVD outbreak in North Kivu, two specific treatments against EVD were identified, raising the hopes for specific care with more favourable outcomes in EVD patients. These treatments were provided by mobile teams from the Congolese “Institut National de Recherche Biologique” (INRB) to

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1 Only 3.3% of all admissions with EVD suspicion in the outbreak turned out to suffer from EVD.
2 Thirty-nine out of a total of 44 deaths among confirmed cases died in the community; and another 11 probable community deaths were identified.
3 Once the initial “spillover” event from an animal to a human has occurred, EVD is transmitted from person-to-person, mostly through direct physical contacts, so new cases have quasi always a clear exposure history with a known case. Reason “contacts” of EVD cases are listed and followed up on.
the more central ETCs, while remote structures had difficulties receiving treatments in time. In total, only 32 out of 78 patients received a specific treatment. As MSF OCB we had an oral agreement to provide specific treatments in the decentralised structures in Bolomba HZ, but in the end, the improvement of patients with other treatments, as well as the difficulties in access, meant that they were never provided.

- Safe burials, a crucial step in stopping transmission, were often only provided by the International Federation of Red Cross and Red Crescent Societies (IFRC) teams in charge, after (EVD-suspected) deceased people’s corpses were already handled (washed, prayed on), drastically limiting the protective effect of the intervention. The proposition by different actors, including MSF OCB, to engage communities more in safe burials (by training and provision of tools to perform the burials themselves) was welcomed with reluctance.

3.2 PROSPECTS FOR 2021

- MSF has 25+ years of experience in intervening in EVD outbreaks. We apply a multidisciplinary approach, which helps to reduce the number of teams on the ground, and which is known to increase communities’ acceptance. The “style” of working, with empathy for and in proximity to affected communities, is also known to improve communities’ acceptance of the response. In an era in which EVD outbreak interventions have become increasingly politicised (often quite a “circus”), MSF’s approach may be, more than ever, of value.

- The counterproductive use of very sensitive case definitions and large search-and-sweep operations should be discussed and discouraged with actors before they are launched. Advocacy for a more targeted response with the affected communities is needed.

- Efforts are needed to increase access for all EVD patients to EVD-specific treatments. This will include negotiations with other stakeholders, as well as practical preparations to facilitate this type of care. Advocacy for care as close as possible to patients and the affected communities (decentralised care for stable patients) is needed.

- Advocacy for larger vaccination campaigns is needed, as the “ring” approach (only vaccinating contacts and “contact of contacts” of EVD cases) does not seem to have a major public health effect.4

- Generally, advocate and demonstrate a response that is humane, putting patients and their families at the centre.

MSF teams in the isolation areas of Mbandaka hospital in Equateur province, DRC. They are putting in place two Ebola Treatment Centres.
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4 The rVSV-ZEBOV (Recombinant vesicular stomatitis virus-Zaire Ebola virus) vaccine is not a good “post-exposure” vaccine, and so has limited capacity to protect the first ring of contacts (when these people would already be infected). The lack of community buy-in of interventions, leads, at times, to many refusing the vaccine. Defining the “rings” is very resource-consuming and difficult.
EMERGENCY MEDICINE

209,588 Emergency Department visits worldwide
25% were high acuity presentations
29% were for trauma
13% hospitalisation rate
39% of patients were children
10 mass casualty incident exercises conducted

KEY FACTS IN 2020

• Emergency medicine involves the management of a broad spectrum of acute illness and injury in all age groups.

• Emergency medicine was provided in 16 field projects comprising 23 emergency departments in health facilities across 15 countries, of which two were new locations in 2020.

• Specialised emergency medicine activities within field projects included a focus on trauma, cardiac care, paediatrics, ambulance care, HIV, and mass casualty incident planning.

• The majority of emergency care was provided by local staff colleagues.

• An intersectional MSF Trauma Response Policy Paper has been validated.

1. OVERVIEW

Emergency medicine involves the management of a broad spectrum of acute illness and injury – trauma, infectious diseases, exacerbations of non-communicable diseases, and obstetrical conditions – in all age groups. In Médecins Sans Frontières (MSF) Emergency Departments (EDs), we provide care for children and adults with acute and often undifferentiated medical or surgical problems, frequently before complete clinical or diagnostic information is available. Health emergencies can occur anywhere, regardless of resource limitations and irrespective of geography, regional, or cultural context, insecurity, or socioeconomic status, and they may be more prevalent in humanitarian crises. Emergency and critical care involves identification and continued observation, assessment, and treatment required to manage critical illness. Essential emergency and critical care is the basic package of universal care that all critically ill and injured patients should receive in all MSF projects.

2. MAIN PROGRAMME ACTIVITIES

2.1 EMERGENCY DEPARTMENTS AND TRIAGE SYSTEMS

An Emergency Department (ED) is a patient care area that serves as the first point of contact for patients seeking emergency care within a health facility. Patients present without prior appointments and due to the unplanned nature of patient attendance, the ED provides care for a broad spectrum of acute illnesses and injuries. MSF Operational Centre Brussels (OCB) emergency medicine activities were either within an MSF-
managed facility or in support of a local Ministry of Health (MoH) hospital. In 2020, emergency medicine was
provided in 16 field projects comprising 23 emergency departments in health facilities (some projects managed
more than one ED) and in one ambulance activity across 15 countries (Figure 1). In 2020, two new projects
with emergency medicine activities began: South Iraq Mass Casualty Incident Planning (MCIP) in Basra, Najaf,
Nasiriyah, Sadr City, Iraq; and Mocha, Yemen. One project was handed over to the local MoH (Timergara,
Pakistan), and two projects were closed (South Iraq MCIP, Iraq; Pibor flooding, South Sudan).

In 2020, more than 50 doctors, 115 nurses, and 45 clinical officers/other clinical staff provided patient care in MSF OCB EDs worldwide. The vast majority of this care was provided by our local/national staff colleagues; only 10 doctors and four nurses were international field staff.

Triage is an essential organisational step to identify critically ill patients with life-threatening conditions. A triage system provides the backbone for essential emergency and critical care within the ED. In 2020, MSF OCB used the South African Triage Scale (SATS) and the Integrated Interagency Triage Tool (IITT) for general EDs, and Emergency Triage Assessment and Treatment (ETAT) for paediatric EDs. During 2020, SATS was used in nine projects, IITT in one project, and ETAT in two projects (Fig 2).

The high acuity proportion – percentage of triage category Red (emergency/immediate) and Orange (very urgent) cases – is a surrogate marker for the proportion of critically ill patients. It is an important ED indicator for the general level of acuity of patients presenting there, the urgency for clinical interventions, and the intensity of resource use. In EDs with an elevated proportion of high acuity, a greater proportion of patients are hospitalised. The overall proportion of high acuity was 25% among all ED visits worldwide, slightly less than a year ago at 29%.
2.2 EMERGENCY DEPARTMENT PRESENTATIONS AND OUTCOMES

Complete data for ED morbidities and outcomes was only available for 12 projects. In total, there were 209,588 ED visits worldwide of which 39% were for children less than 15 years old. Twenty-nine percent of ED visits were due to trauma (3% violent trauma and 26% accidental trauma), 3% non-trauma surgical emergencies, 1% obstetrical emergencies, and 68% medical emergencies (Figure 3).

Worldwide, 83.1% of ED patients were discharged, 12.8% were admitted to the hospital, 3.1% were referred to another health facility, 0.5% died, and 0.5% left against medical advice (Figure 4).

2.3 SPECIALISED EMERGENCY MEDICINE ACTIVITIES

In certain projects, MSF OCB had a special focus on a specific medical condition within its emergency medicine activities related to the medical context and needs of the region. MSF’s work in humanitarian settings provides a unique opportunity to offer specialised emergency care for local populations regardless of an ongoing humanitarian crisis. For instance, MSF OCB has trauma centres in Burundi and Cameroon, and a Cardiac Care Unit within an ED in Pakistan that provides fibrinolysis therapy for acute ST-elevation myocardial infarction (STEMI). Other specific focus EDs included paediatric emergency care in Guinea and Sierra Leone, an HIV-focused rapid assessment unit within the ED in Mozambique, and ambulance care activities in Cameroon. In south Iraq, a specific emergency care project focused on mass casualty incident planning (MCIP) and triage was started working in various hospitals in four cities.

3. LOOKING BACK AND AHEAD

3.1. LESSONS LEARNED IN 2020

- Establishing a triage system goes beyond just prioritising patients and provides the backbone for emergency care by managing patient flow, resources, and staffing models. Implementing a triage system provides integration of the principles of essential emergency and critical care along the patient care continuum.

- Medical activities that do not integrate patient care into a continuum from ED entry, to hospitalisation, to hospital discharge can overwhelm ED resources and staff. This continues to be a challenge for our field teams and should be anticipated with proper planning before implementation of any new emergency care activity.
Local clinical staff providing emergency care have different professional backgrounds, knowledge and skills. Focusing on training and clinical mentoring continues to be challenging due to the limited international staff who have these capabilities. Clinical mentoring is an important part of routine clinical operations but a challenge due to the high turnover of field staff and variability of supervision.

3.2. PROSPECTS FOR 2021

- Improve the quality of care for critically ill patients by incorporating medical activities that integrate the patient care continuum from ED entry to intensive care unit (ICU) to hospital discharge.

- Promote that essential emergency and critical care is the basic package of universal care that all critically ill and injured patients should receive in all MSF projects. Emergency and critical care is identification and continued observation, assessment, and treatment required to manage critical illness.

- Focus on clinical mentoring and coaching as part of routine clinical operations and encourage training for clinical staff via MSF-endorsed training programmes for trauma care, mass casualty incident training, and the BASIC Low Resources course.

- Continue to implement the new Interagency-Integrated Triage Tool that has been jointly developed by the World Health Organization (WHO), International Committee of the Red Cross (ICRC), and all Operational Centres of MSF.


- Integrate the intersectional Trauma Response Policy into emergency care activities and develop an intersectional Trauma Care Framework/Strategic paper.

- Develop an intersectional toolkit for mass casualty incident planning.

The MSF Mocha trauma hospital is a strictly no-weapons zone. It is vital to maintain a safe place for impartial care to all patients needing urgent emergency or surgical medical treatment.

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ENVIRONMENTAL HEALTH

KEY FACTS IN 2020

- 88 Environmental Health officers were deployed to support 39 posts in 22 missions.
- Environmental health teams in the field and headquarters demonstrated agility and flexibility during the COVID-19 pandemic in providing specific support for this new challenge while continuing regular operations.
- Despite restrictions linked to COVID-19, the mass campaign of indoor residual spraying for malaria control in Kinyinya district, Burundi, was successfully completed and protected approximately 311,500 persons (97% of at-risk population). The multi-year engagement on malaria control in the Burundi mission is being accompanied by a multifaceted operational research supported by the Antwerp Institute of Tropical Medicine.
- Connectivity and peer-to-peer exchange between Environmental Health officers in the field was organised online through monthly “Environmental Health Cafés” and regular “Environmental Health Coordinator Days.”
- Environmental Health representatives are now fully integrated into the Medical Department's circles on malaria, migration health, primary health care, outbreak control, antibiotic resistance, climate, environment and health, and others.

1. OVERVIEW

The rationale of Environmental Health (EH) in MSF Operational Centre Brussels (OCB) is rooted in the links between human and public health and the natural and built environment. The term also better represents the wide scope of activities in which EH staff is engaged and their medical imperative, as opposed to the more restricted domain of water and sanitation (“Watsan”).

The main EH activities section is structured according to four overarching medical objectives or contexts, highlighting 2020 achievements linked to safe healthcare environments, emergency EH interventions, community EH activities for primary prevention, and EH in challenging urban contexts. Keeping EH activities running during the COVID-19 pandemic, while integrating new knowledge on the SARS-CoV-2 virus and practices linked to COVID-19 prevention and control, were clearly the main accomplishments of 2020.

The COVID-19 pandemic also forced us to rethink our approaches to Learning and Development and to maintain connectivity between EH staff everywhere.
From the field EH staff, feedback was collected on the current state of integration of EH into the missions’ medical teams and strategies, identifying some outstanding issues. In response, the roles of medical, logistical and coordination teams in EH were clarified in a guidance document and outstanding administrative and budget issues are currently being addressed. During 2020, the operational reorganisation in the Southern Africa region was also further finalised, with a specific setup on regional EH being established and built on the existing EH expertise.

Trained personnel from the EH pool were sent to the field if the EH needs proved to be technically complex, large or time-consuming, and requiring a dedicated EH resource. In 2020, 88 EH officers were deployed to support 39 posts in 22 missions.

2. MAIN PROGRAMME ACTIVITIES

2.1. ENVIRONMENTAL HEALTH FOR SAFE HEALTHCARE ENVIRONMENTS AND MANAGEMENT

All OCB projects include compulsory EH components supporting quality-of-care through safe healthcare environments and management. At minimum, a systematic assessment of adherence to the MSF Essential Requirements for water, hygiene and sanitation for medical infrastructures should be performed in all projects, using a standardised template in order to identify, prioritise, systematically improve and monitor comparable indicators. The Essential Requirements Scanning tool, which had been developed to this end, was updated in 2020, piloted and disseminated to the EH field staff. The median reported scanning score in 2020 was 82.5% (range: 70-98, n = 4). This indicates good compliance but most of all an underutilisation of the Scanning Tool or underreporting. To improve the representability of this indicator, the Scanning Tool will be included in the Internal Monitoring Tool for all projects in 2021.

The above-mentioned Essential Requirements form the minimum standards to which all MSF health structures should comply. However, more specific guidance is required for the design and management of complex hospitals, because of their structural parameters or the medical services they provide. To support field teams involved in complex hospitals, specific design tools and EH standards were developed during 2020, based on a review of engineering and plumbing guidelines. Standards for technical drawings of water and sanitation installations were also developed, in collaboration with the Logistics Department construction referents. These tools were piloted in the ongoing hospital construction dossiers in Bangui, Central African Republic (CAR), Nyabiondo, Democratic Republic of the Congo (DRC), and Maiduguri, Nigeria. Specific water quality issues linked to antibiotic resistance, *Pseudomonas* spp. and *Klebsiella* spp. have been addressed in our projects in Lebanon and Gaza. Complex hospitals will continue to form a pillar of OCB operations. Therefore, transversal support to address these needs has been provided through the position of a Water and Sanitation technical specialist(s) linked to both the Log Support Unit and the EH unit.

Safe management and disposal of hazardous waste generated through our activities is imperative to the “Do no harm” principle and in reducing environmental degradation. In 2020, 98.05 kg of expired drugs was reported for six projects, while only 10.36 kg was reported to have been destroyed in five projects. Internal reporting on expired drugs management should be improved to increase awareness and improve correct follow-up. Medium- or high-temperature incinerators are currently used in six missions to destroy expired drugs and/or laboratory waste, while three missions use co-processing in cement factories. The topic was emphasised during 2020 through an intersectional workshop on incinerator operation, an OCB-wide webinar, where the Malawi mission presented its experiences, and lessons learned and the revision of the manual on hazardous waste management, to be published in 2021.

To address the challenges linked to hospital wastewater management, Decentralised Wastewater Treatment Systems were implemented in two projects in Afghanistan. Capitalisation on these solutions and testing of their effectiveness will continue in 2021.
2.2. COMMUNITY ENVIRONMENTAL HEALTH INTERVENTIONS FOR PRIMARY PREVENTION

Projects’ primary healthcare strategies should include community prevention of key morbidities through EH interventions. To advise on effective and adapted primary prevention strategies, EH unit members were embedded into the Medical Department’s Primary Health Care and Malaria circles. Below are some highlights of 2020 accomplishments in primary prevention activities for diarrhoeal diseases and malaria.

In Gorama Mende, Sierra Leone, prevention of diarrhoeal diseases and malaria have become an integral part of the project’s strategy on integrated community case management. Following morbidity mapping and assessment, health centres and villages more prone to seasonal diarrhoea were identified and linked to a likely risk factor of lower water tables in traditional wells during the dry season. The EH team increased year-long access to potable water by deepening existing wells, digging new ones or by community water filter donation and training. The project team also supported a mass distribution of long-lasting insecticidal nets for malaria prevention, which was at risk due to constraints related to COVID-19.

The ZimHub project in Zimbabwe focused on prevention of reoccurrence of cholera and typhoid fever in urban hotspots and the development of replicable and adaptable groundwater access delivery models and toolkits with a key component of community engagement. In 2020, the project created eight new Community Health Clubs around market areas in Harare, training 421 community members on diarrhoeal diseases and COVID-19, providing approximately 11,000 people with potable water. Project-to-project support on community water provision and waste management in the form of in-person technical and strategic advice and experience sharing was established between ZimHub and the Cabo Delgado project, Mozambique, and the Karachi project, Pakistan.

Support for safe groundwater provision is available through the EH unit’s groundwater specialist and mobile kits and modules for geophysical prospection, manual drilling and borehole diagnosis, updated in 2020 to service depths up to 500m. All groundwater kits and modules are pre-positioned at MSF Supply and can be requested by operations for temporary deployment or longer-term use.

In Kinyinya district, Burundi, an area of perennial hyper-holoendemic malaria transmission, an indoor residual spraying campaign using Sumishield 50WG was safely completed for the first time in Burundi by September 2020, prior to the seasonal increase of transmission. The campaign provided effective malaria prevention measures for approximately 311,500 persons (97% of at-risk population) through spraying 64,777 households (98% of households identified) to complement on-going malaria case management. This preventative activity was essential in order to sustain reductions in *P. falciparum* prevalence observed after the 2019 spray campaign and to avoid a resurgence of malaria transmission in this population, which lacks access to bednets in functional condition. While still early in the monitoring period, the incidence rate/per 1000 persons in Kinyinya is 44% lower compared to other districts in the same epidemic strata six months post-spray.

2.3. EMERGENCY ENVIRONMENTAL HEALTH INTERVENTIONS IN HUMANITARIAN CRISSES AND OUTBREAKS

The COVID-19 pandemic demanded great agility and flexibility from EH teams in the field and headquarters in absorbing new and evolving knowledge on SARS-CoV-2 transmission, providing technical guidance on biosafety and proposing effective strategies for COVID-19 control and prevention.

In collaboration with the COVID-19 Medical Working Group, a follow-up of the latest developments and scientific evidence were translated into contingency measures, new consolidated protocols and guidelines. Innovative Personal Protective Equipment (PPE) was tested and validated. An “IPC & Environmental Health - COVID-19” section was established within the Sherlog knowledge base for capitalisation and dissemination of guidance and resources.

An EH unit member was appointed to the COVID-19 taskforce. Operational support to hospitals or elder care homes was provided by EH staff in Brazil, Italy, Belgium, Norway, the United States, and elsewhere. Work included carrying out assessments and providing guidance on biosafety, environmental decontamination,
ventilation, laundry, waste management and outbreak preparedness. Respirator disinfection for contingency purposes using UV-C technology was piloted in Belgium, Malawi and Zimbabwe.

In addition to EH activities for COVID-19 control in health facilities in regular missions, various additional community COVID-19 prevention and control activities were implemented, including distribution of hygiene kits, community water supplies, installation of handwashing points, hygiene and disinfection in key public locations and creation or reinforcing community health clubs for health messages and community level surveillance.

Other emergency responses with an important EH component in 2020 included the floods in Pibor, South Sudan, and population displacement and cholera outbreak in Cabo Delgado, Mozambique.

Major flooding in Pibor cut off access to potable water for the population and increased exposure to malaria and malnutrition. In response, the EH team provided 60,000 liters of potable water per day by surface water treatment for the whole duration of the floods and supported regular medical activities and mobile nutritional clinics. Once the water receded, the team rehabilitated existing water sources, including the cleaning and disinfection of five boreholes, recommissioning three small-scale gravity schemes and repairing several hand pumps.

In response to population displacement in Cabo Delgado, Mozambique, aggravated by inadequate local water sources, cholera and COVID-19, integrated EH interventions were set up. These included provision of water and sanitation, hygiene kit distribution and setting up of community health clubs. Thirty-six groundwater sources were rehabilitated and two new ones constructed in 2020 through project-to-project support from the ZimHub.

Lastly, in Muyinga province, Burundi, an outbreak of ulcer wounds occurred and a project was set-up to support wound care and outbreak investigation. In 2020, 45,836 wounds were cared for by the medical team and investigation was started on behavioural and environmental risk factors with the objective of understanding infection dynamics and identifying preventative measures. This project highlighted the challenges associated with mobilising the required methodologies on investigation, diagnostics and multi-sectoral engagement and with balancing immediate and longer-term priorities.

2.4. ENVIRONMENTAL HEALTH IN URBAN UNPLANNED SETTLEMENTS

Unplanned urban environments are often associated with poor environmental health due to overcrowding, challenging access to water and sanitation, poor waste and wastewater management and vector proliferation. In Mbare, Zimbabwe, two approaches of urban EH solutions have been piloted on solid waste management for income-generation and community wastewater management. These pilots aimed to create healthier urban environments by reducing water source contamination, re-use of treated wastewater, reducing blockages of drains and sewers by plastic and organic waste and reducing vector breeding sites. Similar approaches are being investigated for Karachi, Pakistan, for reducing Hepatitis C transmission through improved community waste management.

3. LEARNING & DEVELOPMENT: NEW OPPORTUNITIES FOR CONNECTIVITY

The COVID-19 pandemic temporarily impeded international travel and hands-on trainings but boosted connectivity through online platforms. So, while the face-to-face trainings for EH staff were put on hold, different solutions in Learning and Development through online exchange were explored.

A catalogue of online EH training modules was set up intersectionally and specific courses were proposed to EH pool members best corresponding to their individual learning needs. Induction of new EH staff is, from now on, accompanied by tailored online trainings chosen according to their previous experience and the field tasks they will cover.

Several initiatives for online peer-to-peer exchange were set-up to strengthen experience-sharing among field EH staff. Monthly EH cafés were started, in English and French, open to all EH officers in the field to discuss the challenges they face, to share technical solutions developed in the projects and get feedback on new guidelines and tools developed by the EH unit on Essential Requirement for Health Structures and Hazardous Waste Management. Specifically, for the EH coordinator pool, an online “EHCo” day was organised every three
months, with a first edition focusing on the challenges they faced in their role and during the “Annual Review of Operations” process as well as technical sessions on standardised monitoring tools and hazardous waste management. A real-time online practical training on emergency water treatment solutions for the EH team in Cabo Delgado, Mozambique, was set up in collaboration with MSF-Supply and EBC.

4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

• Continuing the integration of EH into the Medical Department is mandatory and the recognition of EH personnel as part of the interdisciplinary team remains vital. Improving the comprehension and uptake of EH activities by medical staff is crucial to realise the full potential of properly executed EH activities in medical-operational strategies. This will be facilitated by the Medical Academy, amongst others. EH personnel also need to better understand the challenges faced by medical personnel and grow accustomed to partaking in public health planning.

• To support the integration of EH in mission medical teams and strategies, a few outstanding issues were identified and are being addressed. These were linked to incoherence in the current EH setup in the MSF International Reference Field Functioning Grid (IRFFG) and confusion on budgetary follow-up of EH activities. EH positions’ career paths, the IFRRG and technical skills should be better defined in order to avoid recurrent misunderstandings. Together with the Finance, Medical and Logistics Departments, EH activity budgeting is now being clarified.

• There is underreporting of EH indicators and continued work is required to come to a concise and relevant set of EH activity indicators.

• Online exchanges and online course modules form a valuable addition to the EH Learning and Development strategy. However, hands-on trainings remain essential for transmitting technical skills and will be restarted when possible.

• External partnerships enabling qualitative and timely environmental investigations of disease-causing pathogens and contaminants need to be further established. As demonstrated for SARS-CoV-2, the Burundi ulcer wound project, and others, insights into environmental detection and stability of disease agents is important for developing adapted EH strategies, but often go beyond MSF’s EH technical skill set.

• A bigger effort on reinforcing expertise on Viral Haemorrhagic Fevers in the EH pool should facilitate the staffing process of future interventions.

4.2. PROSPECTS FOR 2021

• Establish and oversee compliance to the Essential Requirements for all health structures and push for corrective measures where necessary.

• Publish the updated manual on Health-Related Hazardous Waste Management and develop improved technical support on incinerator operation and maintenance.

• Pilot wastewater surveillance of SARS-CoV-2 through collaboration with Antwerp University and assess the feasibility and transferability of this technique for detection of antibiotic resistance in wastewater. Develop tools for monitoring and evaluation of pilot studies on waste and wastewater management in Zimbabwe and Afghanistan.

• Launch operational research on the status of ventilation in OCB’s health structures and the possibilities for improved guidance and tools, in collaboration with the Logistic Department’s referents on heating, ventilation and air conditioning.
• Work on improved epidemiological data collection and analysis of pre-identified EH-related morbidities to facilitate EH risk assessments. Encourage exchanges between mission or project EH and epidemiology staff by mirroring such links at Cell level between the EH advisors and “Epi support.”

• Officialise the research collaboration with Antwerp Institute of Tropical Medicine on malaria investigation and control in Burundi, including a key component on capacity building to the mission and Ministry of Health. Support the introduction of next generation bednets in MSF through technical guidance, clarified supply options and a prioritisation of relevant contexts and missions for introduction of these innovations.

• Reinforce ongoing projects with key components of community engagement, based on specific toolkits, project-to-project support from the ZimHub and collaboration with health promotion teams.

• Groundwater kits and modules will be better accessible to OCB and partner sections through formal portals and guidance.

• Focus on issues of environmental degradation linked to artisanal mining in Venezuela and Zimbabwe and develop adapted solutions for safe water provision.

• Organise an “EH emergencies” workshop to support the revision of OCB’s emergency scenarios, EH-related intervention strategies and resources (kit contents, list of equipment and pre-allocated stocks) and the emergency preparedness plans of the missions. Possible questions to frame this workshop include: Do we still consider emergencies as the core activity and added value for OCB? How do we define “emergency” and what are the main EH emergencies? What are the priority contexts we see for EH emergency interventions? Do we need to develop a more “proactive” approach to EH needs and targets within the Medical and Operations Departments, rather than a “passive” assessment of EH needs?

• Continue the development of the EH toolbox for unplanned urban settlements.

• Contribute to OCB’s action plan on “Climate, Environment and Health” through inputs from the EH field staff.
10.

**EPIDEMIOLOGY/EPICENTRE**

| **7** | studies with ongoing data collection |
| **2** | new studies designed |
| **8** | studies providing analysis and results |
| **2** | trainings held |

**HIGHLIGHTS OF 2020**

- Intersectional surveillance of the pandemic in MSF contexts as well as other COVID-19 related projects
- Epidemiological support in the Democratic Republic of the Congo (DRC) to provide an intersectional overview of the Ebola Virus Disease epidemic with additional support for measles and COVID-19
- Recruitment started for the study FujiLAM in Eshowe, South Africa

**1. OVERVIEW**

Epicentre’s epidemiological and research studies provide Médecins Sans Frontières (MSF) with evidence to improve MSF’s interventions and medical care. The main areas include research in emergencies, studies designed to enhance operational strategies as well as preventive, curative, and diagnostic tools, and support for monitoring activities. Results may be used to support advocacy both in the scientific community and among national and international authorities and stakeholders. Epidemiologists, statisticians, and laboratory specialists, among others, comprise the Epicentre scientific team. For more than 15 years, MSF Operational Centre Brussels (OCB) has integrated Epicentre epidemiologists into its team to enhance communication and facilitate the implementation of new research projects. In 2020, four Epicentre epidemiologists made up part of the MSF OCB Medical Department team: three in Brussels and one in Cape Town at the Southern African Medical Unit (SAMU).

**2. RESEARCH ACTIVITIES**

**2.1. FIELD EPIDEMIOLOGY**

During 2020, Epicentre continued providing epidemiological support for the Ebola Virus Disease (EVD) response in the Democratic Republic of the Congo (DRC); it was the 10th EVD epidemic in North Kivu, South Kivu, and Ituri Provinces, and the 11th in Equateur Province. Epicentre facilitated the standardisation of data collection tools as well as the centralisation and analyses of data across all partners participating in the response.

During 2020, Epicentre contributed with three additional intersectional epidemiologist positions for measles epemics in the DRC and Central Africa Republic (CAR) and for COVID-19 in the DRC. It provided a global epidemic overview disseminated in the form of a regular SitRep publication and accompanied by a dashboard. An intersectional epidemiologist participated in surveillance meetings with the Ministry of Health (MoH) and other partners that allowed better access to information in real-time, as well as participation in discussions on national surveillance/intervention strategies.
Epicentre supported activities in Italy at the very early stage of the pandemic as the first country in Europe to experience a massive spread of COVID-19, documenting and analysing the ongoing spread of the virus.

In conjunction with the DirMed platform, Epicentre created a position to help coordinate an intersectional COVID-19 focal point platform and manage related project data across a number of sections, creating and updating a flexible line list, dashboard and regular SitReps, as well as automated outputs to support projects.

In order to help interpret the measles situation in the DRC after a long, nationwide outbreak, a study was proposed to measure measles vaccine effectiveness. The study protocol and preparation were completed in 2020 with data collection under way by the end of the year as part of a Congo Emergency Pool (Pool d’Urgence Congo (PUC)) measles intervention in Bogosenubea, Sud Ubangi. Results are expected to be available in mid-2021.

In 2020, Epicentre visited the PUC to assess its archiving and management system. Based on this evaluation, proposals were made to either improve the existing tools and/or to develop a new data collection and centralisation tool appropriate to the needs of the PUC. Discussions are ongoing.

### 2.2. MEDICAL RESEARCH

#### EBOLA VIRUS DISEASE

During the 10th epidemic in the DRC, a new strategy of a decentralised model of EVD care was assessed using compiled data from all EVD health facilities. Decentralised centres were associated with shorter delays to admission without increasing patient risk of death. A triage algorithm was developed to have a more efficient, easy-to-use tool to evaluate and classify patients according to their probability of EVD infection. Its performance, tested against retrospective and prospective patient data, appeared promising. Manuscripts are being drafted.

In collaboration with the Ministry of Health, a digital database allowed collection of extensive data from medical files of patients hospitalised in all EVD treatment centres. Retrospective data entry is ongoing. The analysis will identify signs, symptoms, and trends of deterioration among patients to allow early and adapted supportive clinical interventions.

Also, in 2020, Epicentre continued to support MSF as needed for the implementation of vaccination against EVD in the context of the ongoing outbreak.

#### VACCINE-PREVENTABLE DISEASES

External funding was obtained to partly cover the costs of the randomised, non-inferiority trial to evaluate the immune response to a delayed second dose (six to 12 months compared to the standard 14-day interval) of a cholera vaccine in Conakry, Guinea. However, in 2020, the project remained on standby due to the pandemic. It was resumed in October and will be implemented in 2021.

In mid-2019, a case-control study was initiated to estimate the protection of one dose of the typhoid conjugated vaccine, Typbar-TCV®, against clinical typhoid fever among inhabitants of three suburbs in Harare (Zimbabwe). The study aims to measure vaccine effectiveness under real life conditions, in endemic and epidemic settings. Due to the COVID-19 pandemic, recruitment was still under way by the end of 2020 but hopes to be completed by April 2021.

#### HIV

In South Africa, a manuscript reporting the main results of the second HIV population-based survey conducted in Mbangolwane and Eshowe, KwaZulu-Natal, South Africa, was prepared. This manuscript compared the differences in the HIV epidemic and cascade of care results between 2013 and 2018. Other manuscripts, including one reporting the tuberculosis findings, are planned for 2021. The findings of this study guided MSF and the Department of Health in defining relevant strategies.

In Malawi, the results of a study assessing the HIV risks and engagement with care among female sex workers in Nsanje, a rural and disadvantaged district of Malawi, were presented at the MSF Scientific Days in London. This study used a respondent-driven sampling model. The study report was finalised and shared with the authorities and main stakeholders and a manuscript was prepared (in press).
In Mozambique, a manuscript was prepared and submitted reporting the results of two cross-sectional surveys conducted by Epicentre and OCB in collaboration with Operational Centre Geneva (OCG), South African laboratory partners, and the MoH. The manuscript emphasised the alarming levels of pre-treatment drug resistance and acquired drug resistance plus the need for a fast rollout of the integrase-based first line anti-retroviral treatment (ART) regimen and for easier access to viral load monitoring and drug resistance testing.

Also in Mozambique, Epicentre continued providing technical support to manage and analyse a dataset of Pre-Exposure Prophylaxis (PrEP) among sex workers in Beira.

In the DRC, an article was submitted for publication assessing the prevalence of major genotypic resistance mutations among ART-experienced patients hospitalised with advanced HIV at the Centre Hospitalier Kabinda (CHK), in Kinshasa, DRC (OCB) and in Homa Bay, Kenya (Operational Centre Paris (OCP)).

A summary document presenting the results of five different HIV drug resistance studies conducted in the sub-Saharan Africa region was prepared in collaboration with SAMU and recently shared with the World Health Organization (WHO) to support the guideline update discussions. An opinion paper will also be prepared.

In 2020, a study aiming to describe the prevalence of invasive bacterial infections, the type of bacteria, and their antibiotic sensitivity in HIV-infected patients was launched in the CHK (Kinshasa, DRC). Unfortunately, it was put on hold due to the pandemic in early March 2020. The study should restart in 2021.

**TUBERCULOSIS**

The FujiLAM study aims to investigate the diagnostic performance and the ease-of-use of a new point-of-care urine test for the diagnosis of tuberculosis (TB) – a ground-breaking advance. In 2020, the study started recruitment in four countries (Uganda, Kenya, South Africa and Mozambique). The study aims to recruit around 1800 HIV-positive ambulatory adults. This research is implemented by three MSF sections (OCP, OCB, OCG) and by Epicentre. The study is funded by the ANRS (Agence nationale de recherches sur le sida et les hépatites virales, an agency for research on HIV and TB in France) and by MSF. It will inform MSF, national programmes, the WHO and the scientific community on diagnostic performance and other aspects of the test and will contribute to future WHO recommendations on the use of FujiLAM.

The endTB clinical trial that aims to evaluate less toxic and more effective treatments for multidrug-resistant TB (MDR-TB) continued recruitment in Khayelitsha (South Africa) along with six other MSF countries involved. This trial is funded by Unitaid and implemented in collaboration with Partners in Health (PIH), Interactive Research and Development (IRD), Harvard Medical School (HMS), the Institute of Tropical Medicine (ITM) and MSF/Epicentre. The enrolment at the OCB site ended in 2020. A second trial for fluoroquinolone-resistant MDR-TB (endTB-Q) started in 2020 in an OCB site in India.

For the first time in a Malawi prison, a comprehensive TB screening and treatment package for Latent TB Infection (LTBI) and active disease was implemented; Epicentre conducted the analysis. Results showed good acceptability, high prevalence of LTBI and good uptake of TB Preventive Treatment for HIV positive and negative individuals. The main results were presented during two webinars organised by OCB and through a final report; an article is currently being prepared.

**HEPATITIS C VIRUS (HCV)**

Epicentre continued to provide technical support to the OCB Hepatitis C Virus (HCV) project in Karachi, Pakistan using the HepaMUD, a database developed and supported by Epicentre, to monitor patients receiving a new HCV treatment. The statistical support planned for the Meerut project in India did not happen due to the COVID-19 pandemic.

**COMPREHENSIVE ABORTION CARE**

In 2020, the AMoCo (Abortion-related Morbidity and Mortality in Fragile and Conflict-affected settings) study continued with funding from Elrha and in collaboration with Ipas and the Guttmacher Institute. The study aims to assess the magnitude and severity of abortion-related morbidity in fragile and conflict-affected settings using: 1) a rapid assessment of health facilities, 2) a knowledge, attitudes and practices survey among health professionals, 3) a quantitative study among patients presenting for post-abortion care, and 4) a qualitative study among patients who experienced an abortion-related “near-miss” event (life-threatening complication).
In 2020, the data collection was completed in Bangui (CAR, OCB) and started in Jahun (Nigeria, OCP). Unfortunately, the study in Masisi (DRC, OCB) was postponed because of COVID-19 and security incidents. Analysis of the Bangui data started in November 2020 and reporting is planned for 2021 (including an oral communication at the MSF Scientific Days) while the data collection will continue in Nigeria and DRC.

**NUTRITION**

In 2020, we could finally ship, from Niger to Belgium, all biological samples from the research project aiming to improve our understanding of the aetiology and pathophysiology of kwasiorkor. Analysis with OMICS-based technologies started in the laboratories of Ghent University (Belgium) and Cambridge University (UK) and will be completed in 2021.

**3. TRAINING**

In 2020, Epicentre conducted one intersectional “Populations in Precarious Situations” (PSP) course in Europe. The second PSP and the first Responding to Epidemics (RepEpi) training was cancelled due to the pandemic. A RepEpi was organised online at the end of the year. Lessons learned from that experience will help improve the quality of the next online RepEpi session (March 2021). In 2020, Epicentre also started the preparation of a two-week training in Epidemiology and Statistics for the OCB Medical Academy. This training will take place mid-2021.

**4. LOOKING BACK AND AHEAD**

**4.1. LESSONS LEARNED IN 2020**

- Research collaboration between OCB, SAMU, and Epicentre continued to be productive and harmonious. In the specific context of COVID-19, this collaboration demonstrated its relevance and adaptability by ensuring the continuity or smooth temporary interruption of non-COVID-19 projects while implementing intersectional surveillance of the pandemic in MSF contexts as well as other COVID-19 related projects.

- Due to the pandemic, some planned meetings between OCB and Epicentre were postponed. However, virtual meetings were held at the end of the year with Epicentre and OCB medical, operations and finance directions. OCB raised suggestions to improve the Epicentre-OCB way of working.

**4.2. PROSPECTS FOR 2021**

- In addition to the ongoing studies listed above, Epicentre will support OCB to implement an evaluation on Case-Area Target Intervention (CATI) for the cholera outbreak response in DRC and potentially in Zimbabwe after a generic protocol was validated by the MSF Ethics Review Board (ERB).

- Epicentre will remain alert to continue supporting MSF in its response to the COVID-19 pandemic.

- Epicentre will continue to ensure the dissemination of study results within OCB and other MSF sections, as well as in international forums and to the international medical community.

- Regular meetings will take place between Epicentre and OCB to continue improving the interaction, communication, sharing of experience and collaboration, including with SAMU and the Luxembourg Operational Research Unit (LuxOR). Epicentre will also consider, cautiously, the suggestions raised by OCB and will initiate a reflection process on the possible adaptations of its financing mechanism.

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1 Comprehensive Abortion Care (CAC) includes Post-Abortion Care (PAC), Safe Abortion Care (SAC), contraception and the link with comprehensive sexual and reproductive health services.

2 Enhancing Learning and Research for Humanitarian Assistance

3 An international, non-governmental organisation that increases access to safe abortions and contraception.
HEALTH PROMOTION

HIGHLIGHTS OF 2020

• 84 OCB projects in 37 countries with a health promotion (HP) component (increase of 12%), including 23 emergency intervention projects and 61 regular projects.

• 61 departures of HP expats: 56 activity managers, four supervisors, and one anthropologist.

• An online HP Knowledge Base (KB) and Community of Practice (COP) has been developed on Sherlog and was launched in September 2020. 3500 visits for the KB and 750 for the COP.

• Creation of a Digital HP (DHP) Unit to support the design and implementation of DHP intervention. In 2020, 63 DHP interventions have been successfully implemented.

• Start of decentralising HP support closer to the field with the recruitment of two regional HP focal points (Middle East and Afrique Francophone) to provide first-line operational support to those regions.

• 38 webinars or info-sessions have been organised for the HP community, often in collaboration with HPs on the ground, in various languages, on a diverse range of topics (such as COVID-19, antibiotic resistance (ABR), mitigation of stigma, rumour management, Digital Health Promotion).

• Two online trainings/workshops have been held (digital health promotion and people management).

• The mentoring programme has been opened for HP profiles.

1. OVERVIEW

In 2020, we have again seen a steady increase (+12%) in the number of Operational Centre Brussels (OCB) projects/interventions with a clear Health Promotion (HP) component, compared to previous years. This was largely related to the COVID-19 pandemic, which sparked a high operational demand for HP support. At the same time, it was not always possible to provide experienced HP backup in the field, which pushed us to find new ways to support and engage with the HP teams there. Luckily, different initiatives were already ongoing which helped to increase the HP support capacity and answer needs.
A strong focus has been put on the facilitation of peer exchange through webinars and digital platforms. Webinars were designed in response to field needs, often in collaboration with HPs on the ground and in a variety of languages (English, French, Spanish, Arabic). In September 2020, an HP Knowledge Base (KB) and HP Community of Practice (COP) platform were launched on Sherlog to support this further. This proved to be a success since the KB and COP have been widely used by many HPs and project teams in the field (3500 visits for KB and 750 for the COP). The average number of posts in the COP per day was two, and each question received an average of three answers, making it the most interactive COP in OCB. The KB and COP also allowed more systematic ways of capitalising on HP tools, good practice, and lessons learned from the field. This relates to both initial provision of COVID-19 material and later inclusion of a broader range of HP topics, activities, trainings as well as other aspects of the HP programme. An HP newsletter was shared every month to highlight key developments in HP, news from the field, and new material on the KB.

Based on the two years of Digital HP experience with MSF OCB, a Digital HP (DHP) unit has been created to answer many requests for Digital HP since the start of the COVID-19 pandemic. In total, 63 DHP interventions have been successfully implemented through this unit and the South African DHP hub in 2020: 14 high reach (big target population) and 49 low reach (specific target population). The total number of people reached with the interventions was over 25,000,000, with over 120,000,000 views of HP messages, 17,000 one-to-one conversations, and 8000 comments. By the end of 2020, it was decided to keep the setup of the DHP Unit to guarantee continued support to the field for digital health promotion.

Due to COVID-19, the planned international HP training in Brussels had to be cancelled. In return, a strong focus was put on online learning by organising 38 webinars/info-sessions for the HP community, in various languages, on a diverse range of topics (such as COVID-19, antibiotic resistance (ABR), mitigation of stigma, rumour management, Digital Health Promotion, How to Use Sherlog). In addition, two online workshops have been organised: one on digital health promotion (18 participants) and one focusing on people management in the field (30 HP managers and supervisors).

2020 was also the year of rolling out the decentralised setup for HP support, through the recruitment of two regional HP focal points (Middle East and Afrique Francophone). They provided first-line operational support to the HPs and project teams in their regions. More regional HP focal point positions are foreseen for 2021. Also, the presence of an HP focal point, based in the COVID-19 Taskforce, allowed a more reactive and close support to HP teams in the field, as well more HP involvement in decision making.

Discussions with the Mentoring and Coaching Hub led to the decision to open the mentoring programme to HP supervisor and activity manager profiles. The first HP mentors were trained near the end of 2020.

Although concerns over COVID-19 transmission and infection prevention and control (IPC) measures at times delayed introduction of HP activity or blocked it, COVID-19 led to a boost for community-based approaches and more discussions on Community Engagement (CE), which remains a core process for MSF’s HP interventions. Nevertheless, more commitment and ownership from MSF decision makers is required to further establish CE as a core principle within the MSF movement.

Applied social science continued to play an important role within the field of HP. The teams have been proactive in collecting and sharing patient and community feedback, rumours and perceptions about the services provided by MSF to improve its understanding of the contexts and operations. Planned rapid assessments on health-seeking behaviour, access constraints, perceptions, beliefs, and populations’ needs and demands were essential to determine context-adapted approaches, activities, and services.

Indirectly, the COVID-19 emergency led to increased multidisciplinary and intersectional collaboration for HP in order to further rationalise the HP support capacity.

2. HP TECHNICAL GUIDANCE

In 2020, a number of HP technical guidance documents were developed, including:

- HP Guidance to support the COVID-19 response: HP hotline, mask use, home-based care
- Antibiotic Resistance (ABR) HP Strategic Guidance Paper
• DHP toolkit
• Guidance on how to design an HP strategy
• Guidance how to pre-test health education messages and tools

3. PRESENTATIONS AND NETWORKING

• Presentation “COVID-19 and stigma” by Caroline Walker for the International Medical Standing Committee – MSF international (25 June 2020).


4. SOCIO-CULTURAL ASSESSMENTS

In order to gain a better understanding of socio-cultural contexts in which MSF field teams work, as well as the perceptions, beliefs, practices and behaviour related to health among our target populations, several qualitative assessments were conducted by the MSF anthropologist or HP managers, including:

• HP Survey on stigma during the COVID-19 pandemic in multiple MSF missions, by Caroline Walker.


• Kouroussa, Guinea: Evaluation Anthropologique dans la préfecture de Kouroussa : Itinéraires thérapeutiques, perceptions des principales maladies infantiles et santé communautaire by Florence Métrailler.

• Mosul, Iraq: COVID-19 in Mosul. Rapid Qualitative Assessment on knowledge, attitudes and perceptions by Caroline Walker.

• Kiambu, Kenya: Experiences of Women Who Use Drugs (WWUDs) in Kiambu County: challenges and barriers to access HR services and MAT program by Valentine Grondal.

• Beirut, Lebanon: Focus Group Discussion Report about Migrant workers’ health-seeking behaviour, frequent diseases, access to care and barriers & MSF PHC: location of the infrastructure, accessibility and services by Valeria Reyes.

• Gorama Mende and Wandor, Sierra Leone: Free treatment, free death. The practices of traditional healers and their influence on the health-seeking behaviour of the population in Gorama Mende and Wandor chiefdoms by Doris Burtscher.

• Yei, South Sudan: Sexual Reproductive Health in Yaribe. Antenatal, Delivery, and Postnatal practices in the community, Beliefs and Understanding around Births Spacing by Kate Douglas.

To access these reports, see the intersectional database of anthropological/qualitative assessment reports.

5. LOOKING BACK AND AHEAD

5.1. LESSONS LEARNED IN 2020

• It remains challenging to have community engagement embedded in operational decision making.

• 2020 showed new ways to engage with and support the HP teams in the field, which we should continue to develop further in the future.

• The setup of HP focal points (regional or thematic) to increase HP support capacity allowed a more reactive response as well as a closer support to the field. Other departments showed interest in learning from the HP experience.
5.2. PROSPECTS FOR 2021

HP ambitions have been set for the coming three years (2021-2023), focusing on:

- The development of a global HP workforce, where the recruitment and detachment process can be rationalised.
- Increased awareness-raising regarding the role of HP on all levels within MSF (Field, Coordination, HQ).
- Improve knowledge management for the field of HP through the further development of the KB and continued monitoring of the COP.
- Further improvement of HP support to the field, focusing on briefing, induction and training packages, piloting the mentoring and coaching program for HP supervisors and managers and further development of the setup of regional HP focal points.
- Continue much-needed multidisciplinary collaboration on various medical topics to feed the KB and improve support to the field.
HIV

KEY FACTS IN 2020

- COVID-19 led to severe disruptions of HIV service delivery with reductions in HIV testing, Antiretroviral Treatment (ART) initiations and hospitalisations, and many patients were lost from care.
- Despite COVID-19, the mortality of patients with advanced HIV admitted to MSF-supported hospitals decreased from 26% to 20%.
- MSF Operational Centre Brussels (OCB) left Malawi after more than 30 years, further reducing the number of vertical HIV and key population projects and MSF operations in Southern Africa.
- MSF continued to focus on neglected contexts, especially West and Central Africa, while investments in neglected populations decreased.
- The high rate (>85%) of resistance to first-line antibiotics of community-acquired invasive bacterial infections in AIDS patients in Kinshasa is extremely concerning.
- Overall numbers of patients tested and treated for HIV by MSF OCB continued to drop due to the reduction in vertical projects in high prevalence settings compounded by the COVID-19 pandemic.

1. OVERVIEW

The HIV pandemic continues to be a global emergency and an intersectional priority for MSF. In 2019, there were 38 million people living with HIV, 1.7 million new infections and 690,000 deaths.

In 2020, the COVID-19 pandemic severely disrupted HIV services, slowed down progress, and reversed existing gains. Fewer people were tested for HIV, diagnosed HIV positive and started on antiretroviral treatment (ART), more patients interrupted treatment, and fear of COVID-19 led to decreased hospitalisation and consultations. This will inevitably lead to more invisible AIDS deaths in the community.

MSF OCB operations reflected three major operational shifts. First, from high prevalence countries in East and Southern Africa to low prevalence countries in West and Central Africa; second, from primary care and community-focused to hospital-focused programmes; and third, from demonstrating the feasibility of large-scale coverage of test-and-treat strategies to addressing mortality from advanced HIV.
Operational investments only partially reflected MSF’s new strategic priority areas. Activities addressing advanced HIV increased as did operations in West and Central Africa. However, HIV services remained extremely limited in other neglected contexts, including conflict settings such as South Sudan, Nigeria and the Sahel. Activities targeting neglected populations (key populations, children, adolescents, pregnant women and other vulnerable groups) decreased.

Integration of HIV services into projects with a non-HIV focus remained limited to HIV testing. Only three non-HIV projects started patients on ART, accounting for just 1% of all patients started on ART by MSF OCB. Vertical HIV projects remained responsible for the vast majority of patients started on ART and in HIV care.

2. MAIN PROGRAMME ACTIVITIES

2.1. CONTINUUM OF CARE: HIV TESTING, TREATMENT, RETENTION IN CARE AND VIRAL SUPPRESSION

MSF OCB tested fewer people for HIV, and started fewer people on ART than in any other year since 2015. This was true for first and second-line ART, children and adolescents, and sex workers. However, the total number of patients on ART did not change much, at 75,225 in 2020 compared to 73,051 in 2019.

MSF OCB tested 155,080 people for HIV in 38 projects in 24 countries in 2020 (Figure 1 and Annex 1); 9788 (6%) were HIV positive; 7720 (80%) were started on ART by MSF (Figure 2). Three projects (Beira, Conakry, KwaZulu-Natal) accounted for 91% of all ART initiations.

Integration of HIV services into non-HIV projects did not move beyond HIV testing. While 48% of patients tested were in non-HIV projects, 99% of patients initiated on ART were in vertical HIV projects. There was insufficient data to determine whether the 2068 people who were diagnosed with HIV by MSF but not initiated on ART by MSF were successfully referred and initiated elsewhere. Resolution of this remains a priority. More investments are needed for HIV care to become part of routine service delivery in MSF projects.

The percentage of positive tests remained higher in vertical projects (9%) than in integrated projects (2%) (Annex 2). This is unsurprising given the focus on people at high risk of HIV in vertical projects, whether severely ill or key populations.

Self-testing decreased from 27,329 in 2019 to 6226 in 2020, missing the opportunity to reach the most vulnerable populations. Hopefully the reduced price of $2US per test will reverse this trend.
2.2. ADVANCED HIV AND TREATMENT FAILURE

Advanced HIV disease and treatment failure continued to cause significant mortality and MSF successfully advocated for increased attention to this neglected issue. In 2020, 1,343 (20%) of the 6,840 patients with AIDS admitted to OCB-supported hospitals died during their stay (Figure 3). Although still unacceptably high, mortality was lower than in 2019.

Despite the additional 1,931 admissions in Bangui hospital, the overall increase was small. Hospital admissions decreased in all other projects during the COVID-19 pandemic.

Significant progress was made in addressing major causes of death of people with HIV. A package of care for advanced HIV was increasingly incorporated into policy and scaled up from the initial MSF pilot projects towards wider implementation, sometimes with support from MSF such as in the Democratic Republic of the Congo (DRC) or Mozambique. There was a gradual scale-up of MSF supported innovations such as the point of care semi-quantitative CD4 test, the cryptococcal antigen test, and better treatment options for cryptococcal meningitis and Kaposi sarcoma.

Bacterial sepsis was a major contributor to mortality but remained invisible due to lack of diagnostic capacity. The use of microbiology testing in the Kinshasa project uncovered high levels of antibiotic resistance to first-line antibiotics such as ceftriaxone. The experience of the Kinshasa project in using microbiology to diagnose and treat invasive bacterial infections is being replicated in Bangui, Beira and Conakry.
2.3. NEGLECTED POPULATIONS

The number of projects providing services for neglected populations and the number of patients from these populations receiving care continued to drop in 2020.

Only one project, Beira, provided care for substantial numbers of key populations with HIV. Four projects targeted neglected populations – intravenous drug users in Kiambu, and migrants in Beitbridge, Lesvos and Italy – however, the number of people with HIV receiving care in these projects was minimal.

There were only 847 children <5 years and 2098 between five and 15 years on ART, representing less than 4% of all patients on treatment. Just 449 children <15 years were initiated on ART in 2020, the lowest number since 2015.

Prevention of mother to child transmission (PMTCT) of HIV is a renewed priority especially for West and Central Africa. New projects focusing on pregnant women should see the light in 2022.

2.4. NEGLECTED CONTEXTS

The new advanced HIV project in Bangui brought the number of vertical HIV projects in West and Central Africa to three. A coordinated intersectional approach led to significant improvements in the Central African Republic (CAR). A new project supporting scale up of advanced HIV in three provincial hospitals in DRC will start in 2021.

Only the three vertical projects provided care beyond HIV testing. Projects in South Sudan, Nigeria and most countries in the Sahel, South America and Asia did not provide HIV care beyond HIV testing.

No patients were started on ART in conflict and emergency settings except in Bangui. Renewed efforts on the integration of HIV care in neglected contexts is necessary, especially where healthcare systems are poor such as in South Sudan and Nigeria.

In 27 out of 37 projects testing for HIV, people with HIV were referred to other service providers for ART. To ensure responsible referral, it is important to assess whether people who were referred accessed quality care, even more so when high numbers of people are diagnosed with HIV. If quality of care cannot be assured in referred patients, integration of HIV care into these OCB projects should be considered.

3. ADVOCACY, LEARNING, DEVELOPMENT AND RESEARCH

MSF has brought advanced HIV disease (AHD) care to the fore of the international scene and works relentlessly to improve access to and quality of care through research and advocacy. Diagnostics and medication recommended by the World Health Organization for AHD are often absent on the ground. In 2020, the package of care for advanced HIV advocated by MSF was increasingly incorporated into national guidelines and financed by major donors such as the President’s Emergency Plan For AIDS Relief (PEPFAR) and the Global Fund.

The Southern Africa Medical Unit (SAMU) updated the intersectional HIV/TB Guide for Primary Care, the Advanced HIV/TB Guidelines for Hospital Level and helped develop a toolkit for PMTCT. In-person trainings were severely curtailed by COVID-19-related travel restrictions. However, a programmatic HIV/TB training was successfully held in Bangui in December 2020. In addition, SAMU led the development of the recently launched HIV/TB module in the post-graduate diploma in infectious diseases.

SAMU supported the publication of 24 scientific articles on HIV (19) and HIV-associated TB (5). Key research included studies presenting quantitative and qualitative evidence on longer ART refills, highlighting challenges in access to care among Men Having Sex With Men (MSM), looking at advanced HIV disease and access to diagnostics and medicines including for cryptococcal meningitis, as well as tailored HIV programmes in the framework of universal health coverage.
4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

• HIV and TB services were severely disrupted by the COVID-19 pandemic.
• The 2020 UNAIDS 90/90/90 and mortality reduction targets have not been met.
• A focused approach led to reduced AIDS-related mortality in most MSF projects.
• MSF continued to catalyse policy change at the international, and national level, including on differential service delivery, management and prevention of advanced HIV and welcome back services.
• Operations followed strategic priorities in advanced HIV, and West and Central Africa, but not for neglected populations and contexts.
• MSF OCB realised three major operational shifts for HIV care: from high to low prevalence; from coverage and incidence reduction to advanced HIV and mortality reduction; and from comprehensive to hospital-centred.
• Integration of HIV testing into non-HIV projects did not lead to increased treatment initiation, and it is not known whether diagnosed patients accessed quality care.
• Vertical HIV projects are still indispensable to reach the most vulnerable as well as to effect wider policy and implementation change.
• Antibiotic resistance is a major underestimated threat to people with advanced HIV in Kinshasa and most likely many other settings.
• PMTCT and paediatric HIV care remain critical gaps in many contexts.

4.2. PROSPECTS FOR 2021

• COVID-19 will continue to impact HIV services in 2021 and will require ongoing adaptations.
• To address HIV-related mortality, we will need to address major causes of mortality beyond TB and cryptococcal meningitis and focus more on primary care and community.
• Operational changes are needed to address the needs of neglected populations: children, adolescents, pregnant women, key populations and others.
• Additional investments are needed to integrate HIV care into non-HIV projects, especially in neglected humanitarian and conflict settings such as Nigeria, South Sudan and the Sahel.
• Increasing investment in microbiology and surveillance for antibiotic resistance is urgent and has already started in several projects.
• Retention of HIV projects in Southern Africa is necessary for MSF to remain relevant in HIV.
• New tools like long-acting Injectable antiretroviral drugs and the dapivirine ring are exciting innovations to be piloted in the coming years.
INFECTION PREVENTION & CONTROL

58% of projects completed the Stepwise Infection Prevention and Control Approach (SIPCA)
91% of projects have an infection prevention and control (IPC) manager/supervisor
86% of projects have an IPC Committee
86% of projects have alcohol-based hand rub (ABHR) at bedside/point of care
45% of projects have hand hygiene (HH) compliance ≥ 50% (50-74%)
45% of projects measure compliance with cleaning and disinfection guidelines

HIGHLIGHTS OF 2020

• Developed COVID-19 response and guidelines, supported several projects during the most difficult phases of the pandemic, provided trainings and webinars.

• Responded to Personal Protective Equipment (PPE) crises in several projects with ad hoc recommendations.

• Stepwise Infection Prevention and Control Approach (SIPCA) assessment was encouraged and supported, followed by facility-based action plans.

• Full package of Antibiotic Resistance (ABR) activities, including Infection Prevention and Control (IPC) as the first pillar, was continuously encouraged and monitored. The ABR Circle was established, and plans were made. Surgical Site Infections (SSI) toolkit with SSI prevention bundle and guidelines for microbiological environmental sampling were drafted with work in progress for final versions.

• Challenges: gaps in the field for IPC manager/supervisor positions, delays in implementation due to context issues and the pandemic, discontinuity of regular IPC activities, budget limitations.

1. OVERVIEW

• Predominant activities in 2020 were related to the COVID-19 response at headquarters (HQ) level, with the development of several guidance documents and more remote support for the field. Few field visits were performed due to the limitation of movements and lockdown (Burundi, Ecuador, Lebanon).

• COVID-19 represented a challenge due to the shortage of PPE and the need to adapt IPC to local contexts. IPC provided remote support for COVID-19 in several countries: India, Ecuador, Belgium, Brazil, Democratic Republic of the Congo (DRC), Nigeria, Guinea, Burundi, Yemen, USA, and Syria.

• Direct support was given to teams working in the Belgian COVID-19 projects (Hotel Saint Nicolas, Hotel Gallas, Tour & Taxis), where MSF Operational Centre Brussels (OCB) was involved in the management of moderate and mild cases of COVID-19 patients, support in nursing homes and in migrant camps.

• The IPC team supported different projects in identifying and validating correct disinfectants to be used for environmental cleaning and disinfection, effective against COVID-19, and available in the countries.
Despite the limitations on planned field visits, the IPC team supported different projects with completing their SIPCA assessment and developing action plans, and oriented field staff on IPC programme activities, including coaching, recruitment of IPC Supervisors, construction or rehabilitation plans, PPE use, and follow-up on implementation of recommendations of last visits.

2. MAIN IPC PROGRAMME ACTIVITIES

2.1. DOCUMENTS AND GUIDELINES

- Active participation in the development of minimum requirements for internal fixation orthopaedic surgery in MSF.
- Developed IPC and Environment Health (EH) COVID-19 guidelines and protocols.
- Contribution to other COVID-19 related guidelines and protocols: staff health, basic requirements for emergency facilities to respond to COVID-19 – temporary, semi-temporary and existing structures.
- Development of posters on COVID-19 PPE use, treatment of linen.
- Participated in the development of movies on PPE used in collaboration with the Learning and Development Unit.
- Supported Belgian MSF COVID-19 projects to develop guidelines and protocols on IPC measures for the staff residence, during transportation (in vehicles), in the office; developed a protocol to prevent and fight against bedbugs at Hotel Galias in collaboration with EH.

2.2. FIELD VISITS

Due to limitations of movement and the participation of the IPC team in developing guidelines and protocols related to COVID-19, field visits were limited to emergencies, but the team supported the field remotely.

QUITO, ECUADOR (COVID-19 INTERVENTION)

- IPC technical support was provided for Municipality’s triage, testing and ambulatory treatment and health centres supported by OCB: technical advice, staff training, assessing IPC needs and implementing IPC guidelines.
- Supported and oriented the project team supporting nursing homes: assessed IPC measures and oriented the staff on appropriate PPE use.
- Assessed compliance and gave feedback regarding COVID-19 IPC measures in expatriate residences, offices, and vehicles to avoid staff contamination.
- Participated in training of 120 Techniciens en soins de santé première (TAPS) responsible for contact tracing and home follow-up of COVID-19 patients isolating in the community.
- Guided the project on correct PPE choice and use in collaboration with Supply and Medcos.
- Assessed IPC practices in the Temporary Attention Centre (CAT) and advised for improvement, including for the palliative care unit (patient flow, PPE use, service organisation).
- Coached two national IPC Supervisors.

ARCHE TRAUMA CENTRE AND MUYINGA ULCER WOUNDS, BURUNDI

- Evaluated and helped improve the surgical site infection (SSI) surveillance programme and implementation of IPC SSI prevention measures. As a result, there was an improvement in SSI notification and reduction of SSI incidence compared to an increase in Q4 of 2019.
- Continued coaching the National IPC Supervisor and evaluated the level of hygiene and IPC in Kamenge University Hospital and other health centres supported by MSF OCB.
- In Muyinga, helped put in place basic IPC practices: staff training on hand hygiene, cleaning and disinfection, patient flow, sterilisation, wound care, identifying materials needed.
SOUTH BEIRUT PROJECT, LEBANON (BEMONC AND TWO PRIMARY HEALTH CARE CLINICS)

- Focused on transmission-based precautions (TBP) and identified isolation rooms in each facility for suspected or confirmed COVID-19 cases; created Standard Operating Procedures and trained staff.
- Human Resources (HR) for IPC was re-thought; an IPC Supervisor position will be opened in the beginning of 2021.
- Sterilisation setup was reviewed: layouts, processes, and transportation between facilities.

BAR ELIAS PROJECT, LEBANON (CURRENTLY COVID-19 INTERVENTION ICU LEVEL 3 – INPATIENT DEPARTMENT (IPD))

- Gave support regarding PPE best practices for COVID-19 activities (focusing on the rational use of gloves).
- Multidrug-resistant organism (MDRO) cases in the intensive care unit (ICU): supported IPC management and advised on environmental sampling process.
- Continued surveillance of Ventilator-Associated Pneumonia (VAP), central line-associated bloodstream infection (CLABSI) cases and implementation of VAP and CLABSI bundles monitoring.

REMOTE SUPPORT FOR SYRIA MISSION (OPENING OF A COVID-19 ISOLATION CENTRE)

- IPC training/simulation support before the opening of the mission.
- SIPCA assessment for the activity and action plan; a training and audit programme was developed and followed by the team (IPC and medical)
- Continuous IPC support has been given to the team since the opening.

2.3. CIRCLES (ABR AND OUTBREAK) AND RESPONSE TO HOSPITAL-ACQUIRED INFECTION OUTBREAKS

- Active participation of the IPC team in the ABR Circle: SSI toolkit with SSI prevention bundle and guidelines for microbiological environmental sampling were drafted with work in progress for final versions.
- Presentation of ABR progress and the way forward to Med Ops, in collaboration with the medical department; a focus was put on IPC as a first and standard pillar for the basic and full ABR package.
- The IPC team was also on first-line response for several Hospital-Acquired Infection (HAI) outbreaks in:
  
CASTOR DURING THE KLEBSIELLA OUTBREAK IN NEONATES

- Several meetings were organised in collaboration with the project, the paediatric referent, and the ABR referent to discuss an action plan to control the outbreak. This second outbreak (the first occurred in 2017) was due to a relapse in IPC measures in the project as recognised by the team. Since then, there has been a Flying IPC Manager to support the IPC supervisor and give assistance to the two other projects in the country.
- There is a need for a capitalisation study on the effectiveness of IPC measures to prevent and control HAI.

GAZA “SUSPECTED” OUTBREAK OF KLEBSIELLA IN SURGERY

- The IPC team, in collaboration with the microbiology referent and other departments, guided the team on environmental sampling and on IPC measures to control the suspected outbreak.
- Remote guidance for the SIPCA assessment and IPC action plan.

BURUNDI ULCER WOUNDS

- In collaboration with the Burundi Ulcer Circle, the IPC team was involved in implementing measures for patient and staff safety.
- The IPC team participated in different meetings and discussions of the Burundi Ulcer Circle on the project strategy.
2.4. PROGRESS OF IPC ACTIVITIES IN OCB PROJECTS THROUGH SIPCA ASSESSMENT IN 2020

- The Stepwise IPC approach (SIPCA) is an intersectional self-assessment tool based on IPC policy and is recommended to be completed by all MSF inpatient (IPD) projects at least once a year to evaluate the progress of IPC activities in the project and determine the resources needed for improvement (action plan). SIPCA audits remained a goal despite the challenges and the focus of every project on the pandemic. Key Summary points from SIPCA self-assessment done in 2020 are below:

- In 2020, a total of 22 projects (58%) completed the SIPCA self-assessment, compared to 11 in 2019 (34%) and 17 in 2018 (56%). The target was 70% of IPDs completing ≥1 annual SIPCA assessment by end 2020.

- To improve this completion rate, the IPC team organised two webinar sessions for the field in December, one in French and one in English, to explain the importance of the assessment, how to complete it in KOBO, and how to interpret the results. Also, the IPC team remotely supported several projects, through Teams, with completing the assessment in Niono (Mali), Masisi (DRC), South Beirut (Lebanon), Gaza and Mosul.

- By the end of 2020, the IPC team, in collaboration with the IPC working group, launched a review of the SIPCA assessment tool.

- From the 22 projects that completed the SIPCA in 2020, 20 projects (91%) had an IPC manager or supervisor, 14 of the 22 projects had IPC managers/supervisors that were trained, and six (27%) had a formal qualification (diploma or degree). The objective is that all hospitals have an IPC supervisor and/or manager by end 2021.*

- Nineteen projects (86%) reported having an IPC committee, but only nine (41%) reported keeping minutes, having at least a 70% attendance rate, and holding at least four meetings a year. Each hospital should have a functioning IPC committee (meeting every month with minutes, attendance rate >80%, and an action plan).

- Eighty-six percent of projects reported that Alcohol-Based Hand Rub (ABHR) was available at bedside or point of care, but only 45% reported having Hand Hygiene (HH) compliance greater or equal to 50% (compliance should be ≥50%).

- All hospitals reported having cleaning materials and 18 out of 22 (82%) projects reported having a cleaning schedule. Overall compliance to cleaning and disinfection (CD) guideline was 52%. Ten out of 22 projects (45%) reported measuring the quality of CD compliance using fluorescent markers (Glow check).

- Only 50% of all projects measured Essential Water and Sanitation (WatSan) requirements in health structures.

- The distance between beds remained a challenge in many projects (40% of projects had less than 1 metre between beds), despite knowledge that proximity of beds is a big risk factor for cross-contamination.

- Improvement in Transmission-Based Precautions (TBP) implementation in MSF projects (triage at admission of infectious patients, capacity to isolate, availability of PPE). However, in some projects there was a lack of appropriate individual rooms with sanitary facilities and a lack of isolation rooms with negative pressure for tuberculosis (TB)-positive patients. Only seven projects (32%) reported measuring isolation compliance.

*IPC Supervisor: 11-20 beds (Part-time) and 21-100 beds (Full-time)

*IPC Manager – in addition to the IPC Supervisor and needed if a hospital has more than 100 beds, or if a health facility with 21-100 beds has a Neonatology unit (Advanced level 1-2), ICU, orthopaedic surgery (Implants), Burn unit, is in an endemic area of infectious disease (Lassa fever), in case of outbreak in a hospital or to cover several projects in the same country.
TRAINING

- In collaboration with the OCB COVID-19 Task force, Environment Health (EH) and the Learning and Development Unit (LDU), several webinar sessions (in English, French, Arabic) were organised for field staff on IPC, PPE use, isolation, cleaning and disinfection, linen treatment, and dead body management.
- In collaboration with the LDU, participated in the development of some movies to help the field better understand and implement COVID-19 guidelines, mostly on PPE use.
- Two webinar sessions (French and English) were organised for IPC supervisors/managers on SIPCA.
- In collaboration with the LDU, “The Basic Assessment and Support in Intensive Care in Low Resources for Nurses during COVID-19” was finalised and launched on the online platform, Tembo (early 2021).

3. IPC MONITORING TOOLS FOR PROJECTS AND COMMUNITY

- In collaboration with the Belgian project, the MSF Academy and IPC-EH, development of COVID-19 transversal assessment tool, covering IPC, EH and infrastructure aspects for health facilities in the context of COVID-19.
- Contribution to the development by EH to the BioRisk checklist - assessment tool.
- Survey on innovation/locally-made PPE in the field.
- Guidance on the use of masks in the community and for at-risk populations.
- Follow-up and support for projects to complete the SIPCA assessment.
- Development of PPE estimation tool and support on how to estimate PPE.

4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

- The field teams learned the importance of working in a multidisciplinary team with IPC and Antibiotic Stewardship Committees to follow-up on the implementation of action plans, while discussing and disseminating the results of audits.
- There is a need to have enough trained and qualified IPC staff in the field: better planning is required, in addition to budget allocation.
- The shortage of PPE for COVID-19 was a crisis and a contingency plan was developed to mitigate it, which included extended use of PPE, reuse of PPE, locally-made PPE, passive decontamination.
- There was no IPC representation in the OCB COVID-19 Task Force (only EH), resulting in a late response to field questions as EH forwarded questions to IPC for advice. The same concern was also reported from the field.
- Limitation of field visits due to COVID-19 reduced IPC supervision and support.

4.2. PROSPECTS FOR 2021

- Empower and improve knowledge of IPC staff:
  - IPC e-learning course (Operational Centre Amsterdam (OCA)) in July 2021
  - IPC Supervisors and Managers week
  - Advocate for IPC training through the MSF Academy
  - Detachments of IPC Staff
  - IPC Induction Training on Tembo made mandatory for IPC Managers, Project Medical Referents (PMR), MedCo, Nursing Activity Manager (NAM,) Medical Activity Manager (MAM)
• Improve the implementation and the use of the SIPCA tool via intersectional review, translation of SIPCA into Arabic, Portuguese and Spanish; webinars to the field; Med Ops; individual support.
• Field support with visits planned to Mali, Iraq, DRC, Guinea, Burundi, Pakistan, Haiti, Sudan, Mozambique, and Nigeria as well as continuous remote support.
• Develop and finalise SSI prevention bundle and surveillance toolkit.
• Develop and finalise the environmental microbiological sampling guidelines (air, surface and water) in collaboration with Microbiology, Environmental Health and Heating, ventilation, and air conditioning (HVAC)
• Monitor HR and working conditions of IPC staff and advise management team and Coordination
• Review the job description of IPC supervisors, flying managers and regional positions via the International Reference Field Function Grid (IRFFG). Assure Med Ops/Projects are informed about criteria for the introduction of IPC staff into each project.
• Continue participation in response to the COVID-19 pandemic.

IPC outreach mobile team in Poincaré, one of the 18 places where MSF is fighting COVID-19 in Brussels. Poincaré is run by Samusocial and provides support to around 150 homeless people. MSF is training Samusocial staff on water and sanitation measures, accommodation structures and hygienic measures to prevent the spread of COVID-19.
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LABORATORY SERVICES

HIGHLIGHTS OF 2020

• From early 2020, the main focus of the laboratory department was untangling the complex information around COVID-19 diagnostic tests, especially as there were many “unknown” tests and limited information on their diagnostic performance or utility; these tests were not yet WHO pre-qualified.

• Many diagnostic priorities for 2020 were affected by COVID-19 activities/responses, including scaling up diagnostics for Advanced HIV Disease (AHD) in West and Central Africa and among neglected populations.

• In response to the unknown ulcerative disease in Muyinga province, Burundi, clinical samples were due to be sent to the laboratory of microbiology of Institute of Tropical Medicine (ITM - Antwerp, Belgium) to determine the aetiology. Sample collection was delayed but was scheduled for January 2021.

1. OVERVIEW

With the outbreak of the SARS-CoV-2 virus, hundreds of meetings were conducted with different partners (World Health Organization (WHO), Foundation for Innovative New Diagnostics (FIND), Centers for Disease Control and Prevention (CDC), African Society of Laboratory Medicine, MSF Laboratory Working Group, country teams, and MSF projects) to determine the best nucleic acid tests (NAT) and rapid tests for COVID-19, explore device testing strategies, identify national PCR testing gaps, and plan for global distribution of the limited Cepheid Xpert COVID-19 cartridges.

1.1. SARS-COV-2 TESTING IN MSF

Within MSF, there was a quick and successful mapping of existing MSF GeneXpert platforms and readiness for conducting GeneXpert SARS-CoV-2 PCR testing. Regular communication was sent to the field together with Standard Operating Procedures for sample storage/transport/handling and testing, including infection control and prevention. Although global distribution was limited, MSF managed to purchase a total of 5910 GeneXpert SARS-CoV-2 PCR tests that were distributed to: Democratic Republic of the Congo (DRC) (2130), Afghanistan (1480), Brazil (1000), Zimbabwe (500), Ukraine (300), Mozambique (250) and Malawi (250).

During Q3 of 2020, independent studies of COVID-19 rapid diagnostic antigen test (RDT) performance were released, which guided MSF in its RDT choice:
• Standard Q COVID-19 antigen test – SD Biosensor
• PANBIO – ABBOTT

Guidance and the testing scenario’s interpretation using COVID-19 rapid antigen tests was broadly shared and communicated to the field. Testing scenarios on rapid antigen tests were presented based on performance (sensitivity/specificity), patient status (asymptomatic/symptomatic) and presumed prevalence/positivity rate in the group tested. However, there was a high reluctance to order the test kits from the field until late 2020. Generally, the idea of using the rapid test antibodies (IgG/IgM) was not an Operational Centre Brussels (OCB) priority. Although, in late 2020, the Laboratory Mobile Implementer (MIO) successfully installed dedicated COVID-19 diagnosis using GeneXpert PCR and rapid antigen tests in Afghanistan (Khost).

1.2. OTHER COVID-19 RELATED INNOVATIONS

Before the WHO could share more clarified Biosafety considerations for conducting COVID-19 testing, MSF had piloted other innovative biosafety tools like the use of a “glove-box” for sputum sample manipulation (from Mumbai, India), Figure 1. The MSF Mumbai project presented experiences using this innovative glove-box at the National Conference on Tuberculosis and Chest Diseases (NATCON) in December 2020.

1.3. OTHER LABORATORY TESTS DURING THE COVID-19 PANDEMIC

Laboratory preparedness and strengthening plans were discussed and shared with several projects. This was to ensure that other critical laboratory services, like HIV and tuberculosis (TB), were not compromised as there was limited initial knowledge on the possible impact of COVID-19 on HIV/TB patients.

COVID-19 had a massive impact on other laboratory services due to lockdowns that greatly reduced patient access to health facilities. Air travel restrictions resulted in reagent stockouts in some projects (e.g in Nsanje, Malawi).
In Q1/Q2 of 2020, there was an over 60% reduction in GeneXpert MTB, biochemistry and haematology tests conducted in the MSF-supported Shatabdi hospital laboratory (Mumbai, India) compared to figures from Q1/Q2 of 2019. Similarly, GeneXpert MTB and CD4 cell count testing decreased in other MSF-supported health facilities like Munhava in Mozambique and many other projects.

**TABLE 1** Reductions in testing volumes for other essential laboratory tests during COVID-19

<table>
<thead>
<tr>
<th>Country/project</th>
<th>Tests/lab department</th>
<th>Q1-Q2 2019</th>
<th>Q1-Q2 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mumbai, India (Shatabdi hospital lab)</td>
<td>GeneXpert MTB/Rif</td>
<td>6190</td>
<td>3635</td>
</tr>
<tr>
<td></td>
<td>Biochemistry</td>
<td>4670</td>
<td>3585</td>
</tr>
<tr>
<td>Beira, Mozambique (Munhava Health Centre)</td>
<td>GeneXpert MTB/Rif</td>
<td>5295</td>
<td>1275</td>
</tr>
<tr>
<td></td>
<td>CD4</td>
<td>6200</td>
<td>2470</td>
</tr>
</tbody>
</table>

### 2. MAIN PROGRAMME ACTIVITIES

#### 2.1. LABORATORY ACCESS

The table in the Annex presents the active laboratories either supported or run by MSF. Of the 33 laboratories:

- Eleven (33%) were strictly related to HIV and TB activities
- Six (18%) focused essentially on transfusion services related to malaria or maternity activities
- Ten (30%) offered a broad panel of clinical testing required for hospitals
- Six (18%) offered specific diagnostics for more vertical activities such as Hepatitis C, Non-Communicable Diseases (NCD) or Haemorrhagic Fever (Lassa)

#### 2.2. PROJECT HIGHLIGHTS

**NSANJE, MALAWI**

The MSF Nsanje project, which started in 2011, was officially closed in February 2021. For over 10 years, in collaboration with the Ministry of Health (MoH) of Malawi, MSF implemented a range of diagnostic services in Nsanje district hospital and surrounding health centres so as to improve the diagnosis and monitoring of infectious diseases. The greatest impact that the laboratory services made in Nsanje district was to increase the coverage for testing and monitoring of HIV, TB and other opportunistic infections in a very low resource setting. The impact was also evidenced by many policies which were subsequently adopted by the MoH based on MSF innovation such as the national policy on HIV Viral Load (VL), waste management, use of non-sputum samples for diagnosis of TB, experience of scaling up advanced HIV diagnostics, Dried Blood Spot sample use in scaling up HIV VL and Early Infant Diagnosis (EID) testing.

**BEIRA EARLY INFANT DIAGNOSTIC, MOZAMBIQUE**

In 2019, cyclone Idai badly affected infrastructural and diagnostic services in Beira and caused significant damage to the national health laboratory (Ponta-Gea), where much of the province’s HIV viral load testing was conducted. This put more strain on the already under-resourced laboratory and turnaround time for results increased. The MSF project generally struggled to acquire healthcare workers, including those for laboratory services, and this severely affected service delivery.

**ZIMBABWE**

The Non-Communicable Disease (NCD) project in Chipinge/Mutare used the MSF-recommended Hemocue HBA1C test for monitoring diabetes mellitus but recently changed to the MoH-used Wondfo HBA1C POC from Finecare due to the need to ensure sustainability after MSF closes the project next year.
14. LABORATORY SERVICES

ZHYTOMYR, UKRAINE

The completion of the MSF-constructed Biosafety Laboratory Level BSL3 TB laboratory in the TB Dispensary faced multiple challenges which resulted in its delay and its commissioning is expected in mid-2021. Once handover of BSL3 to the TB Dispensary is completed, MSF support will be focused on quality assurance. Collaboration with the National Reference Laboratory (NRL) and the Supra NRL, to implement a Quality Management System (QMS) in the laboratory are ongoing.

MUMBAI, INDIA

The Mumbai Drug Resistant-TB (DR-TB) project, with its diverse range of activities, represents a unique model that allows MSF to address the full cascade of DR-TB care (including HIV), in an epicentre of high TB burden, and in a difficult context. With over 1500 patients in the DR-TB cohort, including 280 paediatric cases, efficient diagnostics are crucial to the success of the project. The recently completed targeted Next Generation Sequencing (NGS) feasibility study for rapid diagnosis of DR-TB represents an excellent opportunity to make a quick diagnosis and improve patient management. As the study comes to completion, a clear strategy for the future of NGS within the project will be needed.

3. OTHER ACTIVITIES

3.1. FIELD VISITS

- Mumbai, India, February 2020: the objective was to assess the overall diagnostic activities, looking for critical gaps and potential improvements whilst also briefing the new laboratory manager on the project. The visit conducted a review of the ongoing NGS study and connected with other key institutions for collaboration.

- Nsanje, Malawi, December 2020: to support the project closure and write up capitalisation reports.

- Bangui and Bangassou, Central African Republic (CAR), January-February 2020:
  - Follow up of the Internal Quality Control measures for chemistry, haematology and blood transfusion.
  - Induction and coaching of the MSF lab flying position with priority given to the HIV project.

- Embu, Kenya, March 2020: Support for NCD project and evaluation of different external laboratories for further referral of lab analysis.

- Khost, Afghanistan: Field implementation of SARS-CoV-2 PCR testing using the GeneXpert platform, together with the use of COVID-19 rapid antigen test.

3.2. TRAINING

Due to COVID-19, the MSF Austria Lab training was cancelled.

3.3. OPERATIONAL RESEARCH ACTIVITIES

- Two publications in 2020:
  - Framework for the implementation of advanced HIV diagnostics: programmatic perspectives (published in Lancet HIV)
  - Diagnostic performance and usability of the Visitect CD4 LFA for screening for advanced HIV disease (published in PLOS One)

- Feasibility of targeted NGS for diagnosis of DR-TB in Mumbia, India (data analysis/write-up now)

- Pilot implementation of stool for TB diagnosis among children (protocol stage: Sierra Leone, India)

- Feasibility of scaling-up screening for AHD in a rural district through use of lay cadres: task shifting experience from Nsanje, Malawi (data analysis/write-up)

- Multicounty diagnostic performance evaluation and feasibility of usage of the urine FujiFilm TB-Lipoarabinomannan (TB-LAM) test (study ongoing)
• Feasibility of integrating the GeneXpert CT/NG assay, the OSOM Trichomonas Test into the STI diagnostic algorithm at the Mbare Adolescent Corner, Harare, Zimbabwe (protocol submitted to Ethics Review Boards (ERBs))

• Multi-country pilot implementation of Visitec CD4 LFA for AHD screening (CAR, DRC, Guinea, Mozambique, Zimbabwe). This was through the CHAI/UNITAID “free” access framework (Early Market Access Vehicle)

3.4. EXTERNAL LABORATORY ASSESSMENTS

Due to movement restrictions, no external laboratory assessments were conducted.

4. LOOKING BACK AND AHEAD
4.1. LESSONS LEARNED IN 2020

• We learned many lessons, especially during the COVID-19 pandemic, which was entirely new to everyone. Most of the time of laboratory advisors was spent in helping to set up testing modalities and support ongoing needs (Figure 1).

• One of the main lessons was waiting for independent performance evaluation studies or for WHO pre-qualification for new tests (especially rapid tests). It was a challenge as MSF was under pressure to recommend novel/new tests for a new disease outbreak, when there were dozens of fake tests in the market, mostly from China.

• COVID-19 caught us totally unprepared. We need to improve networking and collaboration with other institutions and organisations to be able to quickly exchange diagnostic and biosafety related experiences that are crucial in scaling up testing and disease surveillance.

• Collaboration with national disease laboratory control programmes (through in-country MSF projects or lab referents) was essential as SARS-CoV-2 PCR testing platforms’ footprint within national disease control programmes was adequate in most countries, thanks, in part, to large donations of reagents from different funders. This reduced the need for MSF to invest in procuring testing platforms to support in-country testing needs.

• Many national laboratories were repurposed for COVID-19 testing and this resulted in scaling down of testing for other crucial diseases (HIV Viral Load, EID). Thus, it is always important for MSF projects to continue to conduct point-of-care (POC) testing for Early Infant Diagnosis (EID), TB and priority HIV VL samples.
4.2. PROSPECTS FOR 2021

- Stronger focus on scaling up AHD diagnostics to reduce mortality in advanced HIV disease (especially in neglected contexts including West and Central Africa): Minimum tools (CD4, TB LAM, CrAg) and piloting of new tools (Visitect CD4 LFA, semi-quant CrAg, FujiLAM).

- Scale-up task shifting for POC AHD and other POC diagnostics.

- Ongoing support for multi-drug resistant disease testing by GeneXpert for HIV, TB (WHO guidance in 2021 POC EID, VL).

- Pilot implementation of improved paediatric TB diagnosis using stool samples with GeneXpert.

- Feasibility of targeted-NGS in Mumbai (write-up and wide sharing).

- Prepare for the pilot introduction of the new Xpert XDR-TB cartridges; discuss with projects, TB Working Group, share performance details, cost, equipment upgrades.

- Introduce new tools: HIV/Syphilis duo test.

- Ongoing exploration to identify laboratory gaps for the COVID-19 response (COVID-19 Ag Rapid Diagnostic Test donations).

- Scoping for new diagnostics: Pneumocystis Pneumonia, histoplasmosis.

- RDT Lassa Fever for possible operational research in Nigeria.

- In Ukraine, move the tuberculosis microbiology laboratory from old building to the new BSL3 laboratory together with all testing equipment; to ensure Zhytomyr BSL3 laboratory adheres/follows biosafety policies; and to support the laboratory in passing all standard microbiology tests for commissioning and compliance with ISO 15189.
LASSA FEVER

HIGHLIGHTS OF 2020

• Significant increase in the number of identified and treated (suspected and confirmed) Lassa fever (LF) cases in the integrated LF care project in Abakaliki, Nigeria at the Alex Ekwueme Federal University Teaching Hospital Abakaliki (AE-FUTHA).

• No LF infections in the staff of AE-FUTHA, with good compliance to Infection Prevention and Control (IPC) measures.

• Over 99% of LF suspected patients were tested by PCR (AE-FUTHA), with an improved (good) turnaround time, facilitating early management. Improved standardisation of the management of LF patients.

• Systematic psychosocial care was provided for patients and their caretakers, as well as awareness sessions within the affected communities in the Abakaliki project (“holistic approach”); the latter was much affected by restrictive COVID-19 measures.

• Continuous low LF case load in MSF’s Hanga paediatric hospital in Kenema, Sierra Leone, with only one confirmed case among all admitted patients throughout the year.

1. OVERVIEW

Lassa fever (LF) is a zoonotic, acute viral illness, caused by an Arena virus and transmitted to humans by a specific type of rat (Mastomys natalensis, or the multi-mammate rat). The disease is endemic in large parts of West Africa, with Nigeria and Sierra Leone being the most affected countries. The disease is estimated to cause around 100-300,000 cases and 5000 deaths each year, though those numbers are believed to be severely underestimated, mainly due to a lack of awareness, lack of detection and lack of reporting of the disease. It can provoke severe illness (mainly kidney failure), with an overall 20-30% of hospitalised LF patients dying. A specific treatment against the disease exists in the form of IV Ribavirin, but robust data proving its efficacy are lacking, as is access to a fully pre-qualified drug. A vaccine against the disease is being developed (mostly pre-clinical and early clinical trials) but is not expected to be available in the near future.

1 All indicators are for the integrated Lassa Fever care project in Abakaliki, Ebonyi state, Nigeria (as in the Hanga hospital project in Kenema, Sierra Leone, only a single case of LF was reported in 2020).
MSF Operational Centre Brussels (OCB) supported federal and state health authorities to provide integrated Lassa fever care in the South-East of Nigeria (Ebonyi state), and in Hanga hospital, Kenema, Sierra Leone, both in LF-endemic areas.

PROVIDING INTEGRATED LASSA FEVER CARE IN THE FEDERAL UNIVERSITY TEACHING HOSPITAL OF ABAKALIKI (AE-FUTHA), EBONYI STATE, NIGERIA

The focus in 2020 was to improve access to quality LF care at AE-FUTHA, as well as better Infection Prevention and Control (IPC) standards. MSF continued to support LF services (temporary isolation wards, LF treatment centre and laboratory and ancillary services) in terms of coordination, material provision, recruitment and training of healthcare workers. MSF continued to cover all costs for admitted suspected and confirmed cases.

MSF signed two Memoranda of Understanding with the State Ministries of Health (MoH) and Environment (MoE) to increase awareness, detection of cases and protection against LF. Support will be provided for case identification, contact tracing, environmental decontamination and safe burial.

HANGA PAEDIATRIC HOSPITAL, KENEMA (MSF OCB), SIERRA LEONE

Activities continued as before and included the provision of safe working (and living) environments for staff and patients. MSF introduced the necessary IPC and Environmental Health (EH) measures, systematic screening of patients for LF, temporary isolation and management of LF suspected cases and referral of confirmed cases to the nearby Kenema General Hospital, the LF referral hospital in the country. Ensuring high-quality staff health was also part of the package of LF-related activities.

2. MAIN PROGRAMME ACTIVITIES

2.1. PROVIDING INTEGRATED LASSA FEVER CARE (AE-FUTHA, EBONYI STATE, NIGERIA)

IDENTIFICATION AND MANAGEMENT OF LASSA FEVER CASES

In 2020, a total of 372 suspected and confirmed LF cases presented themselves to AE-FUTHA. Of those, 88 tested positive and six remained “probable” cases. The other patients were confirmed negative by PCR testing.

This was a significant increase in both the number of suspected and confirmed cases (65.2% and 57.9% respectively) of LF cases seen at AE-FUTHA in 2020 as compared to 2019. The majority (89.2%) were adults or children over the age of five, with slightly more men (52.2%). The reasons for this increase in cases are unknown, but may include better awareness and detection of the disease, or perhaps a true increase in LF infections.

Distribution of Lassa fever patients admitted in AE-FUTHA in 2020 by epidemiological week (source: MSF LF line list)

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2 Negative PCR test for LF, but high clinical suspicion
All 13 Local Government Areas (LGAs) of the state reported (suspected) cases. The number of cases reported per LGA varied greatly, with Abakaliki LGA being the main “hot spot,” reporting the most suspected (n=109) as well as the most confirmed (n=27) cases. Izzi LGA, a more rural LGA and one of the main “hot spots” in previous years, remained a “hot spot” in 2020.

LABORATORY DIAGNOSIS OF LASSA FEVER

Close to all (99.2%) suspected LF patients received a PCR test. The average turnaround time\(^3\) for this testing was 1.5 days, a clear improvement from last year’s time (2.9 days). This permitted more rapid initiation of correct treatment. In the low LF season, turnaround time had a tendency to increase, due to the grouping of samples to save reagents. This issue was overcome by providing bigger (buffer) stocks of reagents.

The positivity rate was, at 24%, slightly lower than last year’s (26.1%). This was an encouraging trend as a lower rate suggests better awareness, as well as a tendency among clinicians to test more often for LF, which is recommended for a disease with such a non-specific clinical presentation.

The overall Case Fatality Rate (CFR) of confirmed LF cases was comparably high in 2020 and 2019 (40.4% and 39.7% respectively). This high CFR may be explained by patients presenting late, as suggested by the high proportion (60%) of confirmed cases with fatal outcomes and dying within 48 hours after their admission. In addition, patients presented with severe presentations of the disease (anecdotic evidence) and there continued to be a lack of a (proven and qualified) specific treatment for the disease. The lack of a standardised local protocol and, at times, delay in initiation of treatment mostly due to a very hierarchical way of working, with junior doctors having to await their senior’s approval before initiation of treatment, may have contributed to this high CFR. The team developed and introduced standardised clinical protocols for suspected patients awaiting their LF test results to improve their quality of care.

No staff at AE-FUTHA contracted LF in 2020. One para-medical staff member from outside of the hospital tested positive and one accidental exposure, not leading to disease, was reported among healthcare staff of AE-FUTHA.

Compliance with LF-specific IPC measures was considered “acceptable to good,” as evaluated by direct observation. To permit a more in-depth and systematic monitoring of this compliance in the future, a new monitoring tool, the Stepwise IPC Improvement Approach (SPICA), was introduced by the MSF teams.

The main challenge to guarantee good compliance to IPC measures, including personal protective equipment (PPE) use, was the high turnover of staff (as AE-FUTHA is a training hospital), a challenge addressed by increasing the frequency of trainings.

PSYCHOSOCIAL CONDITIONS IN AND SUPPORT TO LASSA FEVER AFFECTED PATIENTS AND THEIR CARETAKERS

MSF psychosocial teams provided psychosocial care to LF patients and their family members/caretakers throughout the course of the illness and recovery, with systematic sessions at admission (initial psychological assessment), pre-discharge as well as post-discharge. Pre-discharge and follow-up sessions were guaranteed for all consenting patients. Although certain patients were too ill to benefit from an initial assessment at admission, support was given to family members/caretakers.

At admission, a majority (88.4%) of patients reported fear/anxiety. The main symptoms reported during follow-up included sleeping difficulties (40%) and the re-experience of symptoms (40%).

Systematic assessment of 38 LF survivors revealed that more than half of them suffered from some symptoms of Post-Traumatic Stress Disorder (PTSD), mainly upsetting or intrusive thoughts (56%) and difficulties with attention and concentration (22%), even if symptoms were not sufficiently severe to classify them as PTSD. Systematic assessment of depressive symptoms revealed appetite changes (23.1%) and fatigue (17%), but rarely full depression. Post-discharge, 17.5% of patients expressed feeling stigmatised, with a smaller proportion (7.7%) not feeling like disclosing their LF infection to others. The number of psychosocial sessions was tailored to individual patients’ needs.

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\(^3\) Defined as the time from sample collection to the time of elaboration of the result from the laboratory (which does not always correspond with the information being available to the clinician)
AWARENESS AND UNDERSTANDING OF LASSA FEVER BY PATIENTS, THEIR CARETAKERS AND THE AFFECTED COMMUNITIES

Close to 80% of LF patients and their caretakers received a “health talk” at admission, although some were too ill to benefit. At discharge, 70% of patients received a discharge talk (addressing reintegration into their community) and a “discharge kit.” In addition, some patients who consented received a home visit after discharge.

Community awareness and health promotion (HP) sessions were provided to one quarter of all LF-affected communities. This rather low coverage was mainly explained by COVID-19 related restrictions.

ENVIRONMENTAL HEALTH

Support continued for water provision, waste management and laundry. Standards were reached for water quantity (300 litres of water per patient per day), accessibility and quality.

An increase in the quantity of waste produced was seen when COVID-19 hit (some isolation structures were used to manage COVID-19 patients), mainly humid waste (in particular uneaten food), so food provision was reviewed.

In addition to the activities in AE-FUTHA, the EH team conducted 53 house or hospital decontaminations (confirmed cases). Those activities were conducted in close collaboration with the HP team, facilitating community acceptance and understanding.

HANGA PAEDIATRIC HOSPITAL (MSF), KENEMA, SIERRA LEONE

A small number of LF suspected cases was seen in 2020 (six in the third quarter and nine in the fourth quarter) – not surprisingly during the LF season. Only one case tested positive for LF. He was referred to Kenema Governmental Hospital, the referral centre for LF in Sierra Leone, where he died.

The medical team of the LF ward continued supporting the general wards in case of a LF alert while welcoming and integrating a new Community Health Officer.

3. OTHER ACTIVITIES

3.1. OPERATIONAL RESEARCH AND DOCUMENTATION OF ACTIVITIES (DEVELOPMENT OF MODEL OF CARE)

The protocol of an observational study describing LF disease was resubmitted to and approved by the MSF Ethics Review Board. While awaiting the signing of a research agreement among study partners, the AE-FUTHA site staff was trained to launch the study during the 2021-2022 season. Another study protocol, concerning the use of a LF Rapid Diagnostic Test (RDT), was drawn up, as was an agenda for further topics of research, including environmental and virus persistence studies.

The project started a more systematic documentation of activities, procedures and protocols to define a “model of care” for future advocacy purposes, as well as future LF projects.

3.2. HUMAN RESOURCES AND TRAINING

Incentives were provided to staff from AE-FUTHA, the MoH and the MoE for the duration of the peak season. In addition, extra staff were recruited, trained and assigned to the LF wards during peak season.

Several training sessions were conducted for medical and paramedical staff at the entry points and wards of AE-FUTHA and five peripheral structures; topics included quality care for LF patients and standard IPC precautions. AE-FUTHA (para)medical staff received trainings on the emotional reaction of patients/caregivers, communication, and breaking bad news. Previously, MSF provided most of the trainings, but in 2020, the AE-FUTHA staff became more involved in their delivery.

A state level workshop involving all Disease Surveillance and Notification Officers (DSNOs) was organised by the project to increase awareness of LF and support the surveillance system.
4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

AE-FUTHA, ABAKALIKI, NIGERIA

- For now, the management (financial and managerial) of all LF activities in AE-FUTHA is very much delegated to MSF, with the hospital management relying heavily on MSF for the recruitment and training of extra staff. There was no dedicated budget for this at the national or state level.

- Despite the challenges, AE-FUTHA seemed more ready to identify and manage LF patients safely. They included improvements to the identification and management of suspected cases at the entry points of the hospital, having LF-specific wards with acceptable IPC measures, and providing better protection for staff and other patients. Awareness and diagnosis of LF improved, as did turnaround times of specific LF testing, permitting more rapid case-specific management.

- As in many other contexts, the COVID-19 pandemic significantly impacted the project. Free access to communities was denied for the usual follow-up of patients and other outreach activities.

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- LF suspected cases spent a relatively long time in regular (intensive care unit (ICU), emergency room (ER)) wards before being transferred to the isolation ward, potentially putting staff (and other patients) at risk. LF screening tools were available to permit early detection of suspected LF cases, but they were not always used consistently.

- The facilitation of blood transfusions involving cross-matching of blood, while respecting the recommended LF specific bio-safety measures, was challenging. However, a technical revision of the activity led to a solution.

- With staff having little experience in the management of LF and the low case load, the need for closer technical advice and support was expressed.

4.2. PROSPECTS FOR 2021

- MSF managed to obtain access to a new source of IV Ribavirin, improving access to the drug, which remains the standard of care, although awaiting further clinical trials.

AE-FUTHA, ABAKALIKI, NIGERIA

- With LF activities in the hospital running more systematically, the project can increasingly focus on activities in peripheral health facilities and the community. Strengthening of the referral system is planned, as is the increase of awareness sessions in targeted “hot spot” communities and the reinforcement of the surveillance system. These activities will permit improved LF case detection and more rapid management while reducing the risk of nosocomial transmissions in the periphery.

- The introduction of a standard patient file, better definition of the standards of care (through the design of a clinical protocol) and a more systematic use of potentially lifesaving interventions (renal replacement therapy), should contribute to a further increase in quality of care. Operational research, may, depending on the findings, contribute to further improvements to the quality of care. The development of a model of care may help to inspire future LF projects.

- The project will, in view of a future handover of activities, try to negotiate financing and management by the Federal and State Ministries of Health.

HANGA PAEDIATRIC HOSPITAL, KENEMA, SIERRA LEONE

- Further guidance in the use of the LF screening form will be given by the LF team, aiming for earlier identification of suspected cases. The time period acceptable to keep a patient in regular wards is being
discussed and a better integration of the LF team (through participation in medical meetings) into the general medical team is being encouraged.

- Closer cooperation with Kenema Governmental Hospital to achieve easier access to referred patients’ information is a future aim. Another is more regular communication with HQ technical referents, which will contribute to the finalisation of certain “pending” LF specific protocols in the domains of IPC and Water, Sanitation and Hygiene (WASH).
**MALARIA**

**KEY FACTS IN 2020**

- Malaria activities had to be adapted to the evolving COVID-19 pandemic in order to maintain or increase preventive and curative malaria services while respecting infection prevention and control measures.

- Operational Centre Brussels (OCB) re-engaged in seasonal malaria chemoprevention (SMC).

- Increased awareness and continued investment in the entomological aspects of malaria.

- Elevated Rapid Diagnostic Test (RDT) positivity rates reported well above 50% in several projects with a long-term MSF presence indicated the need to boost investment in malaria prevention.

- The Indoor Residual Spraying (IRS) project in Burundi confirmed the feasibility and effectiveness of large-scale interventions focusing on malaria prevention.

- Despite the intention to do so, OCB has not been involved in piloting innovative chemoprevention strategies such as mass drug administration or intermittent preventive treatment of infants.

- Whilst capitalisation or evaluation of some projects took place (community care project in Bili, Democratic Republic of the Congo (DRC) and Seasonal Malaria Chemoprevention in Nigeria), capitalisation of specific projects and strategies, operational research and communication remained limited.

**1. OVERVIEW**

In total, 223,653 patients were treated by MSF, with another 90,181 patients treated with MSF support in Burundi (Indoor Residual Spraying (IRS) project).

The decrease in the number of malaria patients treated by Operational Centre Brussels (OCB), compared to 2019, was largely due to the closure of some projects with a high number of malaria cases, especially the DRC-Bili project (77,358 patients in 2019).
The individual “stable” projects’ marked decrease in cases was explained by changes in the projects, indicating that the COVID-19 pandemic probably did not have a major impact on access to treatment. Only the project in DRC-Masisi showed a marked decrease by more than half.

A total of 32,647 patients were treated as severe confirmed malaria (38,171 in 2019). We know, however, that the case definition of severe malaria is not standardised among the projects and often reflects all hospitalised patients with malaria; thus, the real number of severe cases was probably lower.

Among pregnant women, 5716 confirmed cases of malaria were diagnosed and treated by MSF (6142 in 2019). The “top ten” projects of malaria numbers treated are listed in the figure below (Figure 1); nine of the ten had more than 10,000 confirmed malaria cases.

Several projects reported a rapid diagnostic test (RDT) positivity rate above 50%: Nigeria (83.6%), Cameroon-NW, Central African Republic (CAR)-Bangassou, Democratic Republic of the Congo (DRC)-Bili, DRC-Pool d’Urgence Congo (PUC), Mali-Niono, South Sudan-Doro/Maban and Pibor. These constantly high positivity rates, especially in projects with a long-term MSF presence, indicate the need to boost investment in malaria prevention.

The number of bed nets delivered through the supply centre increased from 39,424 in 2019 to 113,551 in 2020.

2. MAIN PROGRAMME ACTIVITIES

2.1. INTERVENTIONS WITH A SPECIFIC FOCUS ON MALARIA

BURUNDI

In Kinyinya district, Ruyigi Province, an area of perennial hyper-holoendemic malaria transmission, an indoor residual spraying campaign (IRS), using Sumishield 50WG as insecticide for the first time in Burundi, was safely completed by September 2020, prior to the seasonal increase of transmission within the COVID-19 context. The campaign provided effective malaria prevention measures for approximately 311,500 persons (97% of at-risk population) through treatment of 64,777 households (98% of households identified) to complement ongoing malaria case management. This preventative activity was essential in order to sustain reductions in *P. falciparum* prevalence observed after the 2019 spray campaign and to avoid a resurgence of malaria transmission in this population that lacks access to bednets in functional condition. While still early in the monitoring period, the incidence rate/per 1000 persons in Kinyinya DS is 44% lower compared to other districts in the same epidemic strata six months post-spray. Epidemiological and entomological monitoring activities will continue, in collaboration with the Antwerp Institute of Tropical Medicine (ITM), to better describe the impact of these approaches and develop a decision-making framework to maximise malaria control operations in the future.
SEASONAL MALARIA CHEMOPREVENTION (SMC)

In 2020, MSF OCB re-engaged in SMC. In this strategy, recommended for the Sahel countries, children between three and 59 months receive a monthly dose of an antimalarial (SP-amodiaquine) during the transmission months. OCB successfully supported the SMC intervention in Borno State, Nigeria, in very challenging conditions (COVID-19 restrictions and security issues), covering about 4000 children, mainly in the Internally Displaced Persons camps.

OCB also provided support to SMC in Guinea (Kouroussa) and Mali.

VENEZUELA

The malaria control project in Bolivar state, where a strong surge in malaria cases in mining communities has occurred since 2015, experienced challenges linked to the context (security, administrative) and the focus on COVID-19. Basic activities such as support with commodities, health promotion, and vector control continued. This project contributed significantly to the downward trend in cases starting in 2019 and obvious in 2020.

DRC-BILI

Large numbers of malaria patients were treated (77,358 in 2019) in this project with a vertical community case management component. The project came to an end in November 2019, and the community component was evaluated by the Stockholm Evaluation Unit in 2020, highlighting the missed opportunity to implement integrated community case management that would have been the appropriate strategy in this context.

2.2. STRATEGIES

COVID-19 ADAPTATION

The COVID-19 pandemic caused several challenges for malaria management. There was the risk of reduced access to care (due to absent staff, movement restrictions), stock-outs or shortages of commodities (due to logistics problems or competition with COVID-19 commodities, such as RDTs), and the challenges to safely implement community based activities including SMC, IRS and bednet distributions in areas with ongoing COVID-19 transmission.

Guidance on how to adapt the malaria strategies was transmitted to the field from the very beginning of the pandemic, and specific support to the more challenging projects (such as the SMC campaign in Nigeria) was provided. Strong intersectional and interagency advocacy contributed to avoiding stockouts.

OCB, however, has been able to document the experience of managing co-morbid patients with both confirmed COVID-19 and malaria.

VECTOR CONTROL

There was a continuous increase in awareness of vector control as prevention, including the more technical entomological aspects. The number of bednets provided by OCB increased significantly from 39,424 in 2019 to 113,551 in 2020. However, widespread and increasing insecticide resistance reduced the impact of the standard Insecticide Treated Nets (ITNs). According to the MSF intersection policy, the preferred option is to use “Next Generation ITNs (NG-ITNs)” when these become available, or to use “PBO nets,” integrating piperonyl butoxide next to the pyrethroid, as an interim solution. NG-ITNs are bednets combining pyrethroids and insect growth regulator, or two insecticides of different classes. New generation nets are increasingly available on the market, often in countries where MSF is operating. Despite the increased availability of NG-ITNs, MSF was still relying largely on PBO nets and “missed the boat” for the piloting of these nets, as most of the production had already been allocated to other more reactive actors. At intersectional and section level, priority setting for the use of the NG-ITNs will have to be clarified. An urgent task before MSF is to identify the criteria for prioritisation and to apply these criteria to identify countries where NG-ITNs may have the largest epidemiological impact, in particular, in projects where little gains in reduction of morbidity and mortality were observed in recent years.
COMMUNITY CASE MANAGEMENT

iCCM (integrated community case management) is the term for a standardised strategy, supported by the World Health Organization (WHO), UNICEF, many national malaria control programmes and funding agencies, to offer integrated management for fever cases among children of three months to five years for the three “killer diseases” (malaria, diarrhoea, pneumonia). Initiatives were taken in 2020 to start implementation in Sierra Leone, Guinea and Mali, in line with the plan from 2018 to implement iCCM rather than vertical malaria community case management.

DIAGNOSTIC APPROACH

The diagnostic approach to malaria in OCB remains mainly based on RDTs. Since 2017, MSF gradually introduced an alternative RDT (pan pLDH test) in high transmission areas because of its superior specificity, as the standard HRP2 based test had a specificity as low as 60% in these areas. There was, however, a serious setback in 2020 where there were no quality-assured pans pLDH based RDTs available, and they were not expected before 2022. The RDT market was strongly impacted by COVID-19 as the RDT manufacturers were the main producers of the COVID-19 antigen RDT. Validation of new sources allowing diversification further reduced the risk of stockouts.

PLASMODIUM VIVAX MANAGEMENT

OCB expected to get more involved in piloting Plasmodium vivax (P.v.) management for which there are innovative diagnostic and treatment tools available. This, however, could not be realised as the projects with a significant P.v. burden were either closed (India-Chhattisgarh) or were functioning at a lower level (Venezuela-Bolivar State).

3. LOOKING BACK AND AHEAD

3.1. LESSONS LEARNED IN 2020

- Most projects managed to adapt to the COVID-19 pandemic, maintaining the key malaria preventive and curative services and limiting the expected negative impact on access to treatment.
- A strong interagency mobilisation with intense advocacy managed to limit the impact from COVID-19 on the availability of key malaria commodities.
- Large-scale malaria prevention through vector control is feasible and effective, as demonstrated in the IRS (indoor residual spraying) project in Burundi.
- Difficult decision making about the purchase of the more expensive “new generation (NG) bednets” designed to overcome increasing insecticide resistance intensity, caused MSF (all sections) to fall behind other actors in introducing them.
- Low investment in direct primary care projects continues to limit quality involvement in malaria management and control strategies, but also the opportunity for advocacy and operational research on malaria.
- Experience with service delivery models and specific issues such as pre-referral management and prevention of malaria during pregnancy remain insufficiently documented, limiting opportunities for medical malaria advocacy at OCB.

3.2. PROSPECTS FOR 2021

- Continued efforts to adapt projects to the evolving COVID-19 pandemic will be needed throughout 2021.
- Prevention, especially the distribution and use of bednets, especially NG-ITNs, will have to be further increased, as their use is the best solution to anticipate the eventual negative impact of COVID-19 on curative care delivery.
• Re-engage in emergencies, making use of more aggressive MSF-validated strategies, including mass drug administration in projects with an unacceptable mortality, benefitting from the experiences developed in all of the other sections.

• Become involved in pilot or operational research projects in innovative chemoprevention strategies, such as post-discharge management addressing the high mortality post-hospitalisation of children with severe anaemia and intermittent preventive treatment for infants (IPTi).

• Further investment and support will be needed to achieve good quality context-adapted community case management, including iCCM, as an essential strategy to ensure access and child mortality reduction.

• Start to use NG-bednets where most indicated because of the high level of insecticide resistance and continued high transmission, further roll out “PBO-nets” as long as the NG-bednets are insufficiently available.

• In current or future projects in which *P. vivax* is important, OCB should engage in the piloting of innovative diagnostic and treatment tools.

• We are facing long-term projects with an unacceptably high malaria burden. OCB needs to develop a comprehensive approach based on vector control, pharmaceutical prevention and optimised accessible care, with “accelerator strategies” like mass drug administration combined with the other components to bring malaria down from moderate/high to low transmission. The groundwork for such a project should be prepared in 2021.
1. OVERVIEW

Medical equipment is an indispensable part of MSF’s operational activities and COVID-19 put even more emphasis on this domain. To address the medical needs of MSF patients worldwide and to ensure quality products were used, the transversal Biomedical Service Unit (BSU) had to work very closely with different team members like Medical, Supply, Logistics departments, and Intersectional Working Groups, among others. The result of this collaborative work was that new equipment purchased in the urgent COVID-19 context will still need medical and technical expertise to be developed in 2021.

On the front line, most Biomed field visits had to be canceled or postponed, necessitating a different way of support. Remote training was quickly developed, giving new opportunities to reach out to colleagues in the field. Intersectional collaboration was strong on the technical but also procurement side, allowing knowledge sharing, standardisation, and alignment on equipment specifications and supplier conditions.

2. MAIN PROGRAMME ACTIVITIES

2.1 COVID-19

COVID-19 patients need oxygen, with the most critical ones requiring more advanced forms of respiratory support, including high-flow nasal oxygen therapy (HFNO), continuous positive airway pressure therapy (CPAP), non-invasive ventilation (NIV) or intubation. These therapies have different needs in terms of equipment, user

KEY FACTS IN 2020

• Approximately one million € total increase (22%) in field purchases for all medical equipment and spare parts, either locally or though MSF Supply, despite a decrease of 8% for laboratory equipment (including spare parts). Four additional pieces of medical equipment were added in the Sterilisation and Electro-Mechanical categories in response to COVID-19.

• Local purchases have risen year after year. Global shortages and supply challenges have been another contributor to increased purchases and, in 2020, there was a 32% rise in local purchase requests.

• Several existing missions drastically increased their Biomed needs in 2020 (Belgium, Brazil, South Africa, Lebanon and Yemen). In total, 29 missions from MSF Operational Centre Brussels (OCB) requested Biomed support in 2020.
training, and technical support, so the strategies for support varied between mission contexts and sections. Due to this situation, the Biomed Service Unit had to react immediately and work with medical equipment types and brands that had not been used by MSF in the past.

The medical teams, in headquarters and in the field, initiated the requests for medical equipment and provided needs and specifications; the requests were then reviewed and discussed with the technical referents and Quality Assurance (QA) for Biomed. Following this, intense work was begun with the different supply centres (regional hubs included) and strategic buyers/procurement teams to survey the markets, contact suppliers and suggest alternative equipment solutions. Due to COVID-19, the Biomed equipment portfolio increased, and included different types of ventilators, oxygen concentrators, oxygen generators, high flow oxygen solutions, infrared thermometers, pulse oximeters, and oxygen gas testers, to name the most common. After procurement, the work was not done since guidance on implementation, maintenance, use and management for accessories, spare parts and consumables was required. It also included follow-up on user and technical issues in MSF contexts.

In parallel with the Biomed Service Unit work, the Biomed Working Group responded rapidly to the worldwide oxygen shortage and published intersectional technical briefing notes for Oxygen COVID-19 and Bottled Oxygen. Exchanges with other MSF sections were very beneficial to assess equipment, share suppliers, understand commercial conditions, and exchange technical solutions. The difficult pandemic context clearly showed the strength of standardisation of equipment and collaboration between teams within and outside of OCB.

Finally, a non-permanent multi-adaptable portable oxygen concentrator solution for EPREP for 30 beds was developed with a specific supplier of oxygen generator but was not implemented in 2020.

### 2.2 LOCAL PROCUREMENT AND QUALITY ASSURANCE

The importance of having a quality framework for local procurement of medical equipment was even more critical during these times. Due to the international challenges linked to product shortages, long lead times and import issues, supply hubs (regional included) and local teams had to turn to alternative local solutions.

In 2020, 36 missions reported local pharmacy purchases (10 more than in 2019). This resulted in a total of 3764 medical device items requested locally (vs. 1523 in 2019). From these, a total of 723 medical equipment items were requested (vs. 546 in 2019 and 175 in 2018) from 26 missions. This was mainly electromechanical and laboratory equipment (539) and the rest divided amongst equipment for anaesthesia (110), sterilisation (37) and medical imaging (37).

Follow-up with suppliers at the local level remained one of the biggest challenges for medical equipment in the field. A continuous increase in local procurement will require a resourceful and flexible approach to manage this issue in the future.

### 2.3. INTERNATIONAL PROCUREMENT AND QUALITY ASSURANCE

Supply has been, without any doubt, an indispensable member of the Biomed Service Unit and a strong partner for medical equipment procurement and servicing. With the involvement of MSF Supply, Biomed QA, and Strategic Buyers, a strong network of multinational manufacturers, suppliers and local distributors has been and is being further developed, monitored and improved, leading to international purchasing contracts and global service level agreements.

Due to COVID-19, MSF Supply was on the front line to contact suppliers for MSF standard equipment, but it also researched alternatives with competitors to get the best lead times and conditions. Several new large pieces of equipment were purchased in 2020, including Monitor Non-Invasive Blood Pressure (NIBP) V100s (+136%), 10L Oxygen Concentrators New Life Intensity and DeVilbiss (+80%), Intensive Care Ventilators, Monnal T60 (+1000%), and Pulse Oximeters Rad 5 (+29%).
Purchases of brand-new equipment linked to COVID-19 included 40 Ultraviolet Disinfector UV Smart D25s, 25 20L Oxygen Generator ModulO2s, 25 High-Flow Heated Respiratory Humidifier Airvo2s and 740 Infrared Thermometer No Contact EX-IR200s.

In 2020, commercial and service level agreements were divided between the three supply centres: MSF Logistics in Bordeaux, France; MSF Supply in Neder, Belgium; and the Amsterdam Procurement Unit (APU) in Amsterdam, the Netherlands, to share the workload and allow intersectional standardisation of equipment and supplies. For example, MSF Supply negotiated the conditions of the COVID-19 test cartridges for all MSF sections.

Supplier after-sales and service contracts with major suppliers were discussed and resulted in intense negotiations mostly for laboratory equipment to review and update contracts suitable for MSF field conditions with Alere/Abbott Pima, BD FacsCount/FacsPresto, and BactAlert.

2.4. TECHNICAL SUPPORT AND TRAINING

Technical support was mostly directed toward maintaining COVID-19 medical equipment like oxygen concentrators/generators and ventilators. Due to travel restrictions, several field visits were canceled and colleagues like our Mobile Implementation Officers (MIOs) for Diagnostic Imaging were blocked in Brussels for several months. Technical Referents and MIOs had to improvise and provide remote support. Having a Regional Biomed located in central Africa was very important as his field visits were only moderately disrupted by the pandemic compared to the Biomed team located in Brussels.

Our regional and mobile Biomed colleagues made field visits to six missions (Iraq, Burundi, Central African Republic (CAR), Democratic Republic of the Congo (DRC), Syria from Lebanon, Sierra Leone) compared to seven field visits the previous year, showing the benefits of having Biomed team members located in different parts of the world instead of one location in Brussels.

On the training side, the two seven-day biomedical training courses (English/French), set up in collaboration with all sections in Brussels at the Espace Bruno Corbé (OCB training centre), were canceled. However, a few supplier training sessions still took place for laboratory equipment (Cepheid and Erba online training and Sysmex training in Accra, Ghana). For Biomed technicians from Afghanistan, a Thermofisher training session on the Biosafety Cabinet for microbiology was planned in March in Dubai, but it was also canceled due to the pandemic.

In total, more than 14 online technical trainings were provided by the Biomed MIO for missions like Syria, Gaza and Venezuela. X-ray online training was provided specifically for Syria on the use and maintenance of their radiology equipment. Biomed training for non-technical persons (“Biomed for All”) was also developed, targeting Supply and Pharma, to increase the knowledge of medical equipment, improve collaboration and clarify the differences between Biomed spare parts, accessories and consumables.

3. OTHER ACTIVITIES

Despite the pandemic and the associated workload for the referents in all MSF sections, protocols for medical equipment maintenance were still a priority for the Biomed Working Group. The protocols were all uploaded by the Biomed Service Unit onto Sherlog to be available for the whole MSF community.

On the X-ray side, monthly meetings took place with the Intersectional Imaging Team and the Biomed Referents from all sections who drafted protocols for the different systems (WHISRAD, Poly mobile Plus, Poly mobile 3, Mobylette Hybrid, C-Arm), which included several field equipment and spare parts pictures.

Substantial contributions were made to the Infix Circle to help produce guidance for safely running internal fixation programs in the field. The resulting document provided a set of requirements for reaching standards agreed upon by a Multidisciplinary Team. The Circle was composed of in-house specialists from several other clusters (treatment, diagnostic teams, Infection Prevention and Control, Logistics and the Environmental Health team).
An Intersectional Biomed Guideline was drafted with the work of the referents of the different sections. The objective of this guideline was to help all MSF missions successfully choose, use, and maintain their medical equipment. It provided the fundamentals for assigning responsibilities and for recruiting and training staff. It also aimed to raise awareness of issues related to selecting and installing equipment, workshop needs, planning and conducting regular preventive maintenance, ensuring quality repairs, organising stocks, placing orders and planning for the event of equipment failure.

4. BIOMED COMMUNITY

At the end of 2020, there were a total of 28 technical Biomed colleagues in the field (nationals and expats) across 15 MSF OCB missions. In a few missions, this number dropped due to standardisation of Biomed resources with other sections (Haiti with Operational Centre Paris (OCP)) or due to complete or partial closure of projects (Pakistan and Malawi).

Under the Biomed Service Unit, three MIOs were reduced to two and one Regional Biomed increased to two. By the end of 2020, the following roles in OCB were providing support, directly/indirectly, to the field:

- Regional Biomed Central Africa
- Regional Biomed Middle East (hired but still not on board)
- MIO Diagnostic Imaging Engineer
- Biomed MIO
- Technical Medical Equipment Referent Medical
- Technical Medical Equipment Referent Supply (hired but still not on board)
- Biomed QA MSF Supply
- Strategic Buyers MSF Supply
- Biomed Service Unit Project Coordinator

Biomed services provided by the BSU team were articulated around five categories of activities to ensure quality of care, continuity of service and cost containment:

- Policies and Ways of Working
- Human Resources (recruitment; development/mentoring; strengthening Biomed sense of belonging)
- Field Technical Support
- Sourcing and Procurement
- Knowledge Management & Training

5. LOOKING BACK AND AHEAD

5.1. LESSONS LEARNED IN 2020

- Regional Biomed Support has shown its advantages and strengths, even more so during the pandemic, with its proximity to the field and the delocalisation of support (not putting all the eggs in the same basket).

- Local procurement has become a necessity for medical equipment management. To find the best solution to fulfill medical project requirements and to avoid purchasing suboptimal equipment, needs assessments must be correctly conducted, in addition to the involvement of the right people at the right time. Involvement of Regional Supply is an asset in the search for equipment.

- Oxygen solutions have become a hot new topic for Biomed in MSF where only oxygen concentrators and cylinders had been available in the field. Technical knowledge had to be rapidly developed intersectionally.
5.2. PROSPECTS FOR 2021

- MSF’s exclusive support for standard equipment has been challenged during the past years due to the presence of more and more local Ministry of Health standards where MSF works. Extending support for non-MSF standard equipment will need to be analysed and planned carefully.

- Asset monitoring and maintenance management tools adapted to each project type and staff abilities must be coherently implemented in all projects so that the lifespan of medical equipment in the field will be preserved, making for faster technical support when required.

- Biomed spare parts are complex to manage, store and order (internationally or locally/regionally), causing concern and indecision in the field. Update to Biomed tools (Referential) and specific trainings have been developed to help with the orders and spare parts stock management, but further follow-up and support should be developed for the field.

- COVID-19 response support will continue to be necessary by the entire BSU for the coming year.
MENTAL HEALTH & PSYCHOSOCIAL SUPPORT INTERVENTIONS

1. OVERVIEW

History books will record 2020 as the year when the COVID-19 pandemic took the world by storm. For months, people were forced to isolate and physically distance themselves from their friends and family. The loneliness felt endless. The new, unknown virus made people fearful and anxious. There was a lot of heartache and grief over lost loved ones; sadness over missed opportunities; fatigue following the restrictions; boredom; but hopefulness for a vaccine. The new coronavirus not only targeted people’s physical health, but also seriously affected mental health.

The pandemic showed the world how physical and psychological health are so interconnected. Mental health and psychosocial support were essential for isolated patients with COVID-19, anxious family members and exhausted healthcare staff. Many patients with existing mental health disorders had few resources to manage the insecurity of the pandemic.

The mental health professionals in MSF were aware of the dramatically increased mental health needs during the pandemic and promptly mobilised a global MHPSS response to support patients, family members and staff.

KEY FACTS IN 2020

- There were 42 regular projects with a Mental Health and Psychosocial Support (MHPSS) component in 28 countries.
- Despite the decrease in the number of regular projects with an MHPSS component, the number of new and follow-up individual sessions increased by 26%.
- The number of new patients who benefitted from individual counselling sessions increased by 42%.
- 15 projects with a psychiatric component and an increase of 21% of patients who received psychotropic medication in MSF health centres.
- From September 2020, there were three Mental Health (MH) Referents in Operational Centre Brussels (OCB), two full-time psychologists and one part-time psychiatrist, to provide technical support to the field.
facing this new public health threat. In many cases, the new MHPSS interventions for COVID-19 needed to be incorporated into already existing mental health programmes.

2. MAIN PROGRAMME ACTIVITIES

2.1. MHPSS ACTIVITIES IN MSF PROJECTS

In 2020, there were 42 regular projects with MHPSS components in 28 countries of which four were new projects (compared to 45 projects in 29 countries in 2019). Of these 42 projects, 15 had a psychiatric component, although several other projects had a psychiatric liaison arrangement. Two projects with MHPSS components closed in two countries in 2020. In addition, MHPSS activities were offered as part of three short-term emergency interventions.

Due to COVID-19, all projects adapted their Mental Health (MH) activities to the new challenges. In addition, short-term MHPSS interventions, specific to COVID-19, were conducted in countries such as Belgium, Hong Kong, Brazil, Ecuador and South Africa.

At the start of 2020, OCB had only one MH referent (psychologist) covering all projects. Staffing was increased in June 2020 with a new MH referent, a psychiatrist one day a week, and in September 2020 a full-time MH psychologist was added. This enabled the MH referent team to deliver better quality and more timely technical support to the field.

2.2. COVID-19 MHPSS INTERVENTIONS

Of all the MHPSS in 2020, the activities that most characterised the year were related to COVID-19. The pandemic required prompt responses across all of MSF’s medical disciplines. It also highlighted the necessity of MHPSS as essential parts of overall medical activities. MH aspects were needed in all phases of COVID-19 treatment, from supporting newly diagnosed patients and their caretakers, to helping people cope with the negative effects of social isolation, advising medical personnel on breaking bad news, providing psychoeducation to medical staff, patients and caretakers, offering emotional support in bereavement and increasing care for mental health problems that were deteriorating due to the impact of the pandemic.

In order to rapidly provide MHPSS-COVID-19 guidelines and tools for the staff in the field, in early March, the Mental Health Intersectional Working Group (MH-IWG) composed of all the MH Advisors from the five MSF sections set up a rapid and efficient working collaboration with a weekly meeting that produced all the guidelines and made them available to the field by the end of March 2020. Thanks to their efficient work, a large number of multilingual guidelines and technical documents relating to strategy and implementation of the MHPSS response to COVID-19 were produced very quickly. They included multiple practical tools and materials like videos and leaflets.

The OCB MH Advisor was involved in the taskforce for information sharing, production and validation of technical tools. Cooperation with Health Promoters (HPs) was strengthened in the field, within the taskforce, and between MSF Operating Centres. In order to improve the response to the field, Patient Community Support Advisors from SAMU provided technical support to MHPSS-COVID-19 in the SAMU projects they follow; regular meetings were held with the MH Advisor.

During any outbreak crisis, healthcare and other frontline support workers report high levels of stress due to the threat to their own lives and to the lives of their families, as well as fatigue while working in stressful circumstances and excessive hours. Healthcare workers can struggle emotionally with the scenes they witness. To address these challenges, MHPSS trainings, including online versions, for healthcare workers and other frontline support workers were implemented in nursing homes in Belgium, in USA care facilities, and in Italy’s National Health Service. Collaborative work with the Staff Health Unit was strengthened, producing documents on well-being at work. Capitalisation and research were also carried out, making it possible to publicise and validate the MH interventions, which were useful for advocacy purposes.

Over the last years, technological solutions have been introduced instead of or in addition to traditional face-to-face MH interventions. MSF had already embraced these methods, but the COVID-19 pandemic prompted a speed-up of implementation.
Due to the risk of transmission in many contexts, face-to-face consultations were avoided and instead were conducted by telecounselling. The MH-IWG developed a guideline on telecounselling, in harmony with the Intersectional Legal Department's document, “Legal recommendations on the use of telemicine due to COVID-19.” It contained recommendations for telecounselling, including topics such as the legal framework, medical ethics, consent, medical confidentiality, medico-legal documentation, privacy and data protection. In May 2020, MH Advisors of the MH-IWG facilitated a webinar on telecounselling and on remote supervision for MH Managers/Supervisors in three languages.

A survey was conducted in April 2020 by MH Advisors and Epicentre examining experiences and challenges in adapting MHPS support activities (including telecounselling) during the COVID-19 pandemic. A total of 81 professionals from over 44 countries (from the five operational centres (OCs)) working in MSF projects with an MHPS component answered the survey. The results showed that telecounselling was implemented for continuity of MH care (88.5%), for the needs of new patients (68.9%), and for patients in crisis (47.5%). Generally, the experiences with it were positive, both for field staff and patients. The main challenges were patients’ lack of devices (telephone, laptop) or lack of quiet, confidential spaces. Nevertheless, the implementation of telecounselling was an opportunity for MSF to gather information and learn valuable lessons in order to introduce novel ways to provide MHPS services in areas where access to the physical MSF facility is limited.

2.3. MHPSS INTERVENTIONS IN EMERGENCIES

Emergencies affect people in different ways. People have different levels of resilience, different coping mechanisms and require different kinds of support. Therefore, the MHPSS response to emergencies needs to be flexible, ranging from basic shelter and security required by everyone in the community, to psychosocial support activities, and all the way to specialised mental health care required by a much smaller group of people.

As for emergency activities, 2020 was marked by the responses to the COVID-19 pandemic, although other emergencies did not cease. In 2020, MHPSS activities were set up in emergency projects in Cabo Delgado in Mozambique, in Musina in South Africa, and in Beirut after the blast emergency and in Italy for migration communities.

2.4. INTERSECTIONAL MENTAL HEALTH WORKING GROUP

MH Advisors in the MH-IWG collaborated on finalising the Intersectional MHPSS Guidelines and the Intersectional Pharmacological Guidelines.

Due to the restrictions posed by the pandemic, two intersectional MH courses could not be arranged in person and were cancelled. Throughout 2020, the MH-IWG continued to work on the revision of the course. OCB and Operational Centre Geneva (OCG) MH Advisors led the process with the support of OCG Learning and Development. An online pilot version will be held in April 2021. The Operational Centre Amsterdam (OCA) intersectional training programme on Diagnosis and Treatment of Psychiatric Disorders was replaced by an e-learning module course that was held in November 2020 with six OCB participants. The MH referents from the MH-IWG made improvements to this course and will continue to do so in 2021.

3. OTHER ACTIVITIES

COVID-19 travel restrictions posed an obstacle for field visits in 2020. Nevertheless, the needs for support in the field were even larger than usual. Therefore, much effort was placed on online presence, trainings and support. For MH and Survivors of Torture, a field visit to one project was carried out.

Mental health is an essential part of overall health and should be an integrated part of the medical activities. MH Referents are active members of the circles in Migrant Health, Survivors of Torture, Non-Communicable Diseases (NCDs), and Primary Health Care. The work in the circles enables referents from different medical disciplines to work together and create comprehensive, holistic approaches to care. In addition, MH Referents contributed to several guidelines and protocols: MSF Pocket Guide for Popular Uprisings, Healthcare Record Management Guideline, Nutritional Care for Women and Adolescents Who Are Pregnant or Lactating protocol, New HIV/TB Integration Guidelines, and intersectional Manual for Nursing Care Procedures.
The continuously changing contexts where MSF typically works require flexibility and creativity; new interventions or ways of working need to be developed. Here, high-quality research is key. Therefore, collaboration with operational research was strengthened during the year. MH Referents were increasingly involved in planning research projects and providing technical guidance for research papers.

An essential part of providing high-quality care are the professionals in the field who work to deliver it. MH Referents work closely together with the pool manager, giving technical advice and support for recruiting MH professionals to ensure that the projects’ Human Resource (HR) needs are met appropriately.

### 4. LOOKING BACK AND AHEAD

#### 4.1. LESSONS LEARNED IN 2020

- During a pandemic, preventive and curative MH interventions should be a priority in order to address stress, anxiety, depression, self-harm and violent behaviours in vulnerable people and in order to boost solidarity and increase resilience in individuals and communities.
- During an outbreak crisis, healthcare and other frontline support workers need specific MHPSS interventions to manage the high levels of stress created by the threat to their own lives, the emotional impact with the scenes they witness as well as excessive working hours.
- Recruitment and briefing of MH professionals should be a priority to facilitate rapid, adapted and integrated responses in projects. MH professionals should be included in the task force group.
- Multidisciplinary, collaborative working and communication are essential and must be improved at all levels.
- MH professionals need to improve their technical clinical skills in order to be able to respond quickly in the pandemic and to assess MH needs and priorities.
- Evidence-based interventions are a key component of quality mental health care and must be integrated into care plans.
- Clinical supervision is mandatory and should be developed in projects to assure quality of MH care and psychosocial interventions.
- Social conditions have a strong impact on MH of patients and the population; social assessment needs to be considered as part of any MH strategy.
- Psychiatric care is not sufficiently covered in the MH projects and needs to be improved.

#### 4.2. PROSPECTS FOR 2021

- An important goal of 2021 will be to focus on strengthening field MH staff’s technical skills. A closely related goal is to increasingly ensure that the MH strategies and interventions are evidence-based. Part of this initiative is training field staff on novel, evidence-based counselling programmes such as the PM+; this means monitoring and supporting their implementation and assessing their efficacy.
- MH Referents will also work on improving the field’s knowledge of psychiatric care, and support implementation of guidelines and standards. Task-shifting interventions should be developed in contexts where there are no mental health specialists. A further goal is to ensure that MH care is offered and integrated into NCD projects.
- An important component of strengthening MH technical skills is the technical tools. One is the MH-IWG MHPSS Guideline, which will be published in early 2021. It is the first ever intersectional MHPSS guideline and the result of several years of work by MH Referents from all the MSF sections. It covers the general principles of MHPSS interventions in MSF comprehensively, including operational responses, and specific context-related interventions such as humanitarian disasters, disease outbreaks, malnutrition and sexual violence. A second tool is the MH-IWG guideline on Mental Health and Psychosocial Care for
Survivors of Sexual Violence that was finalised by MH Referents, and will be published in 2021. A third is the first MSF MH-IWG protocol for the Pharmacological Management of Mental Health Disorders that will also be published in 2021.

- An important part in ensuring the quality of care and evaluating needs is monitoring MH data. In 2021, a new MH database and patient files will be implemented. Outcome indicators and specific tools to measure the quality of the MHPSS care were introduced to field projects in 2020 and this work will continue.

- In 2020, MSF gained its first global experience with technology to provide MHPSS care. As a continuation, innovative approaches and specific projects will be capitalised, and through that, new models of care will be developed. For instance, an innovative project of play therapy is in progress and will be implemented in Sierra Leone (with private funding).

- Research development at the project design phase will be supported, which will allow better analysis and enhance advocacy for improved access to MHPSS care in countries where MSF is working.

- To wrap up the year of the pandemic, support will be given to COVID-19 MHPSS interventions and, where possible, resumption of regular MHPSS activities.

Health Promoters Room and the mental health team in charge of the follow-up of patients with COVID-19, Cameroon.
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NEGLECTED TROPICAL DISEASES

HIGHLIGHTS OF 2020

• Neglected Tropical Diseases (NTDs) affect more than 1.7 billion people, most of whom live in extreme poverty.
• Our NTD data are scarce, but more than 6000 reported cases of unexplained fever may include NTDs.
• Venomous snakebite may be neglected in our projects.

1. OVERVIEW

In 2020, MSF continued the fight against Neglected Tropical Diseases (NTDs), filling gaps and pushing for change. But after decades of engagement, our tools remain insufficient with no vaccines and limited diagnostics and treatment, as there is no drive for innovation for these diseases. Another challenge is the scattered pattern in time and geography of most NTDs. Still, NTDs affect more than 1.7 billion people, of whom the vast majority live in extreme poverty. MSF has closed most vertical NTD projects and now is the time for Operational Centre Brussels (OCB), with a patient-centred approach, to consider integrating NTD care into existing projects where appropriate. If we do not look for them, we will not find NTDs in the neglected populations we serve.

2. MAIN PROGRAMME ACTIVITIES

CLASSIC NTDS

Leishmaniasis, Human African Trypanosomiasis (HAT) and Chagas received little attention in our projects last year; fewer than 100 cases were reported in 2020. Main activities included HAT training, implementation of the new drug Fexinidazole for HAT developed by the Drugs for Neglected Diseases Initiative (DNDi), and surveillance to monitor the global case reduction.

NEW NTDS

Venomous snakebite (VSB) is new on the NTD list. A quick internal OCB survey indicated that VSBs are present in several of our projects, but not yet addressed. Assisting antivenom availability and publication of an intersectional management protocol supported by training were the key priorities. An exploration project of outbreaks of both venomous snakebite and malaria in Baringo and Turkana in Kenya has been planned and will include a OneHealth perspective.
Noma has yet to be included on the list of NTDs, although MSF and the Access Campaign have pushed for it. This polymicrobial, rapidly progressing disease causes severe disfiguring gangrene of the mouth and face, particularly in young malnourished children. It carries a very high risk of mortality and long-term morbidity in survivors. Noma may be relevant in our nutrition projects, but stigma and rapid progression of the disease may prevent patients from attending our clinics. Noma will be among the top of our to-do list of projects for next year.

**PROBABLY NOT NTDs**

An outbreak of skin ulcers was discovered in the Muyinga project in Burundi. In total, more than 4000, mostly young school children, were included in the cohort. Our activities included monitoring, wound dressing and antibiotic treatment. The NTD Buruli ulcer was suspected, but preliminary results indicated *Streptococci* was the cause. Investigations are ongoing and operational research planned, including an environmental component.

### 3. OTHER ACTIVITIES

We set out to provide better tools for our projects to manage persistent fever and started to join forces across the medical department, including Antimicrobial Resistance, vaccination, emerging infections, diagnostics and environmental health while reaching out to the MSF Academy. In 2020, more than 6000 patients were reported with fever of unknown origin in OCB projects. They may be a surrogate indicator for persistence fever, which we do not capture, and include NTDs.

The NTD working group launched the second intersectional MSF NTD status report, “Overcoming Neglect,” to raise awareness among stakeholders and the public and to support the new World Health Organization (WHO) roadmap addressing NTDs.

### 4. LOOKING BACK AND AHEAD

#### 4.1. LESSONS LEARNED IN 2020

- Patient centredness in our approach requires coordinating the ways we work (working groups, platforms, circles, sub-circles), particularly in Teams, where no coffee machine talks happen.
- Getting NTDs back on the OCB map requires awareness and a patient-centred approach to integrate NTD care into existing relevant projects.

#### 4.2. PROSPECTS FOR 2021

- Consider ways to integrate NTDs into existing relevant projects.
- Continue the work we started across the medical department to improve persistent fever management.
- Support venomous snakebite management in our projects.
- Explore Noma relevance in our projects.
- Continue support for intersectional advocacy.
NON-COMMUNICABLE DISEASES

16,455 consultations for hypertension
15,230 consultations for diabetes

KEY FACTS OF 2020

• Despite the many challenges due to COVID-19, the three major non-communicable diseases (NCD) projects continued to function in Zimbabwe, Kenya and Lebanon.

• In Zimbabwe, two projects designed to develop innovative, replicable, nurse-led models of care in Mutare and Chipinge Districts in cooperation with the Ministry of Health (MoH) are due to be closed in the first half of 2021.

• The goal to achieve practice and policy changes, including a model of care for insulin patients to trigger policy changes in Zimbabwe and beyond, highlights the need for intensive documentation and operational research activities.

• While in principal Operational Centre Brussels (OCB) is shifting from a vertical to an integrated approach (for example, Bangladesh), conclusive data assessing this is lacking and will require more focus in 2021.

• Insulin management continued to be a priority, along with advocacy for a secure insulin supply.

• Continued involvement in the intersectional NCD Technical Working Group and contributing to document adaptation due to the COVID-19 pandemic for NCD patients.

1. OVERVIEW

In 2020, the COVID-19 pandemic impacted NCD activities, like all others, within Médecins Sans Frontières (MSF) Operational Centre Brussels (OCB) projects. The interaction of COVID-19 with diabetes (DM), hypertension (HTN) and higher risk in the elderly led to greater engagement with NCDs in many projects. Nevertheless, the NCD consultation numbers seemed stable, although the number of projects reporting their activities using the District Health Information Software 2 (DHIS-2) database tool increased. More harmonised data to standardise monitoring and evaluation across the movement remains desirable, as patients benefiting from NCD care are likely to be underreported. The three primary NCD projects maintained their agility and adaptations in care delivery even in challenging times.

The closure of key NCD-specific projects in Zimbabwe (early 2021) is on track, and preparation is ongoing for closing the Embu project in Kenya in 2021. There have been many lessons learned and valuable evidence generated, especially for the model of care developed for insulin management. The focus on improving DM care was continued throughout OCB from 2019, including advocacy efforts. There is a need to ensure that these
experiences are applied to the integration of NCD care into our routine projects as well as to consider the need for focussed efforts to continue innovating and improving our approaches.

2. MAIN PROGRAMME ACTIVITIES

ZIMBABWE

- The Manicaland project completed with Chipinge sites (primary healthcare, rural, HTN and DM) closed in November 2020, while Mutare was planned to be closed early in 2021.

- MSF continued to support the Ministry of Health (MoH) diabetes clinic in Mutare with intensification of the insulin management programme. MSF provided support and training for nurses on basic diabetes management, organisation of clinic space and appointments, and laboratory support including HbA1c measurement. Improvement of existing insulin management was facilitated through provision of a protocol, followed by developing and delivering detailed training sessions targeting doctors and nurses. The plan included logistics for the supply of insulin as well as consumables, and implementation of a system for intermittent Self-Management of Blood Glucose (SMBG).

- Another important activity was to improve the quality of care in blood glucose monitoring and to teach a pragmatic approach for selecting patients most in need of insulin. Given the cost and limited availability of insulin, patient support groups, especially for adolescents on insulin, were set up. A diabetes committee was formed to oversee/coordinate the various departments treating DM in the hospital’s outpatient department (OPD) and inpatient departments (IPD), especially in the surgical wards where there were many patients with poorly managed DM (adults and children).

- The COVID-19 pandemic impacted our activities, but the team managed to adapt by repeating training for their counterparts as necessary. IPD management and acute complications of DM were focuses of training, addressing often neglected components of care.

- A manuscript was finalised describing the NCD model of care and elaborating lessons learned during the set-up and delivery of the Chipinge project for treatment of HTN and simple (non-insulin) DM in rural clinics.

- Strong collaboration with the World Health Organization (WHO) NCD division was developed. This led to the WHO identifying Zimbabwe as one of two countries where NCD management will be rolled-out and scaled-up with a dedicated €25 million of funding. The package of care, developed with the experience from Chipinge (protocols, teaching and training), will be adopted by the Zimbabwe national programme. Unfortunately, there was no interest from the WHO in funding to ensure the continuation of the project in Chipinge as a project of excellence. In this context, funding and availability for drugs is a challenge to highlight.

KENYA

- The Embu project in Kenya is foreseeing 2021 as the year of exit, after successfully implementing a model of care since 2017. The programme included a mentorship scheme, insulin initiation/management for diabetes, and quality care for not only HTN and DM but also asthma and epilepsy.

- From the beginning of the project, 6061 patients have been enrolled, with a total of 17,336 consultations conducted in 2020. The year 2020 was a period of growth all around with expansion to new facilities. The project achieved partial integration of NCD services into the rest of OPD care in 11 health facilities.

- Capacity building through a tailored clinical mentorship programme was the flagship of MSF’s approach. A study was conducted by the Stockholm Evaluation Unit in 2020. Revision of the teaching materials and methodology, while adapting to local contexts was one of the key successes in engaging facilities. However, one challenge was the MoH health workers’ strike towards the end of the year, which interrupted hospital care and the teaching sessions.

- The year 2020 saw 6061 patients enrolled, up from 3878 in 2019.

- A decision was taken not to extend the project beyond its initial five-year term, and thus a road map to closure was developed and communicated. An advocacy strategy was developed to support sustainability of the project after MSF departure, ensuring that the MoH take responsibility for the project and allocate resources accordingly.
LEBANON

- MSF has been serving a population of Syrian refugees with a high NCD burden in Beirut since 2013. Improving outcomes of our patients remained the priority, along with efforts for advocacy. The average number of NCD consultations in 2020 was 967 per month, totalling 11,604 for the whole year. DM and HTN represented 70% of the actual NCD cohort here.

- Strengthened networking and collaborating with other actors ensured continuous care through other non-governmental organisations (NGOs), while MSF kept focusing on more complex patients, including insulin-dependent and paediatric/adolescent diabetics.

- The NCD discharge strategy plan was rolled out from July 2020, with over 500 patients discharged. However, many returned to MSF due to lack of medication or delay in enrolment in other primary health clinics.

- After the blast rocked Beirut in August 2020, some additional NCD drug distribution activities were carried out there. COVID-19 posed a challenge to keep regular operational activities going due to various restrictions and regulations. For NCD patients, access to medicine decreased as a result of stock rupture everywhere.

NCD ACTIVITIES IN OTHER/INTEGRATED PROJECTS

- Integrated projects were defined as those performing NCD consultations, but not identifying these activities as a major focus.

- This will become the main approach to NCD care in OCB in the future with the impending closure of two vertical projects in Africa.

3. INTERSECTIONAL ACTIVITIES

- Twice-weekly meetings of the International Working Group took place during the first months of the COVID-19 pandemic. Discussions were mainly on developing a guidance document for the adaptation of consultation to patients (referring to specific approaches to protect NCD patients from COVID-19 infection risks), an initiative initially developed by the HIV Working Group and extended to NCDs.

- There were several workshops on writing a single intersectional NCD protocol, which led to extended discussion with other specialities in MSF (Paediatrics, Sexual and Reproductive Health), external specialists and NGO representatives.

4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

- Data collection and reporting of NCD activities across OCB remain challenging, highlighting the continued need for adequate support in NCD projects.

- Strengthened networking and intersectional collaboration proved beneficial in terms of harmonisation for NCD care guidance, project management and advocacy, and must be continued.

- Disruption due to the pandemic halted progress towards further implementation of simplified insulin initiation and management protocols in very low resource settings.

- There remains a strong need for development of inpatient NCD-specific treatment protocols to standardise care across a diverse range of integrated OCB projects.

4.2. PROSPECTS FOR 2021

- Implement intersectional NCD guidelines and a three-year strategic plan.
- Ensure successful handover of the Embu project in Kenya, which includes the establishment of a Community Revolving Pharmacy to increase access to NCD drugs during stock-outs in MoH facilities, continue Training of Trainees (ToT) for MoH NCD champions, and further empowerment of our patients.
- Capitalisation and operational research to evaluate the outcomes of our NCD patients in Zimbabwe and Kenya would be a priority.
- Monitor issues with implementation of the DHIS-2 upgrade for NCD variables and reporting, as well as selected indicators.
- Continue advocacy for diabetics who require insulin for improved access to standardised care and free medication.
- Further research output from Kenya, Zimbabwe and Lebanon is expected. For Lebanon, an update to the NCD discharge strategy will be required along with implementation of an adequate referral process. Restart Home-Based Care.
- Ensure adequate HQ support to ensure quality NCD care despite foreseen closure of projects with an NCD focus in 2021.
NURSING CARE

213,415 wound dressings performed
1 hospital implemented negative pressure wound therapy
2,529,753 patients seen in ambulatory settings
220,166 patients admitted to hospitals received nursing care
8 Nursing care provided in eight Level 3 ICUs for COVID-19
1st First part of the intersectional Manual of Nursing Procedures launched

KEY FACTS IN 2020

• The spotlight was on nursing during the 2020 International Year of the Nurse and Midwife, colliding with the COVID-19 pandemic.

• Various COVID-19 nursing protocols and guidance resources were developed for nursing care and management, including the intersectional COVID-19 Briefing for Nurses and the COVID-19 Nursing Staff Ratio and Work Organisation. In addition, a guideline was developed for rostering staff, ensuring the right people in the right place at the right time.

• The first in a series of webinar events was held, Nursing in the time of COVID-19, to promote horizontal exchange of experiences between nurses in the field.

• Development of the intersectional Manual of Nursing Care Procedures continued throughout 2020 alongside development of an upgraded library of resources on the SharePoint page.

• The Nursing Support Circle was launched to unify and empower the voice of nursing in MSF Operational Centre Brussels (OCB), bringing together the associated nursing advisory profiles in OCB to better support the field, improving quality of nursing care and services.

1. OVERVIEW

Nursing staff account for the largest percentage of skilled healthcare workers worldwide. Throughout 2020, nursing has remained at the frontline of patient care across all healthcare settings in MSF OCB. During COVID-19, the contribution of nurses and allied nursing staff on quality of care has been apparent, demonstrating it is essential to have the right nurses with the right skills and knowledge in the right place at the right time. The impact on morbidity and mortality is undeniable, and is most apparent in facilities that are increasing their levels of care in response to higher acuity patients due to the pandemic.

More than 2.5 million ambulatory consultations were provided, 213,415 wound care dressings were performed, 25,690 surgical interventions occurred with nursing involvement, and 220,166 people received care during inpatient admissions. Throughout all of these and other healthcare services, nurses were providing care 24/7. COVID-19 brought higher acuity patients to MSF and MSF-supported hospitals requiring more complex care; eight Level 3 ICUs could not have functioned without the essential presence of nursing care.
2020 marked the International Year of the Nurse and Midwife, colliding with the COVID-19 pandemic. The year highlighted the gaps and challenges faced in nursing within MSF OCB, indicating the need for increased participation in leadership at all levels, especially in positions of strategic decision making and policy development. Additionally, better understanding of the levels and scope of nursing practice, plus recognising nursing specialisations within MSF, are needed.

2. MAIN PROGRAMME ACTIVITIES

2.1. MSF MANUAL OF NURSING CARE PROCEDURES

The Manual of Nursing Care Procedures project, which started in 2018, launched the first procedures on the SharePoint page upon validation of the Nursing Care Working Group during 2020. The manual is complemented by a Library of Nursing Care Resources that is available on the OCB Online Offline Publication System (OOPS). Also available is a collection of Standard Operating Procedures (SOPs) for procedures, supervision tools, working aids, charts and all training materials for implementation.

The procedures cover all ranges of age (neonates, children and adults) and are designed using a standard template to assure all the information needed for execution, training and supervision is available. Each step is complemented with its rationale, all relevant additional information and recommendations.

New procedures continue to be validated and uploaded to the SharePoint page. Translations are becoming available in French, Arabic and Spanish.

2.2. NURSING RESOURCES FOR COVID-19

The arrival of COVID-19 demanded new resources and support for nurses in the field. Advanced nursing care procedures were developed to manage the increased acuity and complexity of cases, collaborating with critical care referents where needed. Some of the nursing care resources included patient monitoring, patient assessment, respiratory support, oxygen titration and weaning, positioning and mobilisation, deep venous thrombosis prevention and nutrition support.

The management of nursing teams in the field brought many questions forward, especially with respect to nurse staffing of COVID-19 wards. In response, referents provided direct support to the field. Supplemental documents were created to guide nursing managers, including the Nursing Briefing COVID-19 reflecting key considerations for each component of clinical nursing care and management in the Nursing Care Framework. The Nursing Staff Ratio and Work Organisation in COVID-19 document was prepared, emphasising that nurse staffing ratios are based on level of patient acuity for a ward rather than on the actual virus. It also guided task shifting using unskilled caregivers to replace the support of family members in basic care once visitors were no longer permitted in health structures, since nurses had felt a large increase in workload.

2.3. WOUND CARE

Wound care remained an important nursing care activity. During 2020, 31 projects reported performing 213,415 dressings in outpatient departments (OPD), emergency rooms and nurse-led wound care clinics. One hospital initiated Negative Pressure Wound Therapy (NPWT), bringing this to three mission locations where it was provided.

Field implementation of the wound care protocol remained ongoing throughout 2020, continuing from 2018-19. Direct support and wound care nurses on the ground are needed to better facilitate implementation activities of the protocol.

The wound care protocol does not include NPWT and it requires specific expertise for implementation. Nurses will need a guideline or SOP to support them in managing NPWT while building in-house knowledge. The Nursing Care Referent and/or Mobile Implementation Officer (MIO) should gain direct experience in this therapy to support field teams during implementation and to be available to troubleshoot problems.
2.4. TECHNICAL SUPPORT AND KNOWLEDGE MANAGEMENT

In 2020, the development of supportive documents and tools continued. The Roster Guideline targeted the nursing staff of hospitals and inpatient services. Developed by a nurse and validated by Human Resources (HR), this guide offers step-by-step guidance for nursing managers, from calculating HR needs in the planning cycle, to managing different scenarios of leave, training, shift swaps, needs for flying staff, and finally building the roster with practical step-by-step exercises. This guideline was deemed necessary to give nursing managers a tool to meet the needs of patient care, ensuring the “right staff in the right place at the right time.” HR needs to fully understand the requirements for staff scheduling and the compromises in quality of care that occur when services are not adequately staffed. Implementation of this guideline is ongoing, and the French version is required.

Efforts were made to reach all relevant nursing care providers and managers with nursing information and tools:

- regular updating of the OOPS Nursing Care page with all available nursing care related documents and tools
- nursing care newsletter shared on a quarterly basis
- direct field support whenever the need was identified or during field visits.

The translation of documents and tools into French remained a big challenge as resources were lacking and the process is time-consuming.

Due to limited or zero access to computers and limitations on email addresses for nurses in the field, despite all efforts, many of the online resources remained inaccessible to the nurses at the bedside providing direct patient care. During field visits, it became clearer that a large percentage do not even know that the resources exist.

Regarding direct field support in 2020, one field visit was undertaken by the nursing care referent during January in Bangassou, followed later by gap-filling the Nursing Activity Manager (NAM) position, from October through December. One field visit was carried out by the Hospital Management Nursing Referent to Bar Elias during February. Unfortunately, due to worldwide COVID-19 travel restrictions, field visits were otherwise limited.

Instead, remote technical support was provided for specific nursing care and management issues, as well as other related medical requests received from the field and from operations.

3. NURSING CARE IN MSF OCB

The Nursing Support Circle was launched in October to “Unify and empower the voice of nurses in MSF leading the profession to shape the future of nursing and healthcare. Improving quality of nursing care through a formalised and structured support system, representing the largest group of skilled healthcare workers within MSF and the diversity in scope of practice of nursing.” This circle brings together referents in OCB, with the nursing profession as their foundation, in an effort to increase the support to nursing teams in the field, to better optimise and capitalise on existing referents and MIOs.

Although nursing is an autonomous profession and nurses compose the largest percentage of healthcare workers in MSF OCB, nursing remains largely underrepresented among other expert medical referents, with a much lower ratio of referents to nurses and allied nursing staff. Added to this imbalance, nurses still function within an outdated hierarchical system.

During the International Year of the Nurse, the State of the World Nursing Report was published by the World Health Organization (WHO) in collaboration with the International Council of Nursing (ICN). The report highlighted the need to ensure nursing representation at higher levels of governance for decision making and policy development given nursing’s major contributions to global health. MSF OCB should seek to capitalise on these recommendations, paving the path to higher level nursing representation.
4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

- Nursing considerations are significantly absent in strategic planning and key decision-making. This was evident during COVID-19 and needs to change. Ensuring that quality of care is possible with available nursing staff requires more input from nursing leadership.

- A shift is required from the traditional MSF hierarchy where nursing is subservient to medicine as it is outdated. This means a more modern leadership structure representative of the countries in which we work and includes a nursing directorship at the side of the medical directorship, better representing the healthcare workforce balance.

- A general nursing pool no longer fits the reality of field requirements. With increased complexity of care, a more robust, targeted recruitment process is needed to identify key expertise and nurses with specialised skills. This recruitment needs to occur for international and national staff alike.

- Nursing resources developed for the field are largely available via online platforms but remain minimally accessed by nurses in the field due to lack of access to an online device or an assigned MSF email address.

- Translation of newly developed nursing protocols, documents and tools into French, Arabic and other prominent mission languages remains a challenge, delaying availability of reliable resources for many nursing staff.

4.2. PROSPECTS FOR 2021

- New intersectional SharePoint page for the nursing library of resources and Manual of Nursing Care Procedures to go live.

- New online learning for nurses to go live on TEMBO: BASIC LR (Basic Assessment and Support in Intensive Care in Low Resources), Nurse COVID-19.

- Review and revamp the nursing profiles within the International Reference Field Function Grid (IRFFG) to ensure clear roles and responsibilities fitting international standards and the scope of nursing.

- Build a community of practice for nursing via SherLog with the Nursing Support Circle.

- Work with the HR recruitment team and nursing pool manager to define and differentiate sub-pools of expertise and specialities required for the various types of care demanded by MSF programme ambitions in the field. This requires lobbying for change in nursing recruitment in MSF.

- Research:
  - Two wound care studies to be proposed, one qualitative and one quantitative.
  - In collaboration with Paediatrics, a study on plastic wrapping of neonates versus use of survival blankets.

- Complete the management component of the Nursing Care Framework.

- Complete the Guidance document for best practices on nursing handovers.

- Provide key support to both nursing management and care to Kunduz for the hospital opening.

- Develop vertical topics for the management of nursing in hospitals with the revision of the Hospital Management Team Training (HMTT).

- Develop a guideline for negative pressure wound therapy.

- Integrate field voices into the Nursing Newsletter through “Questions from the Field” and case studies submitted from field nursing teams to support peer-to-peer learning and innovation sharing.
• Increase access to online platforms for ALL nurses in the field to utilise the resources for evidence-based practice that contribute to the quality of care. This may require the creation of additional email addresses or added investment for online devices (e.g. a desktop computer at each nursing station in a hospital with a shared login and email address).

• Write a concept note and proposal on the need for higher level nursing leadership in MSF OCB.

• Develop a nursing association or alliance, creating links with national nursing schools and registration bodies in mission countries. It would identify levels of nursing in those countries and encourage the appropriate positioning of nurses for a given hospital or project, as well as defining continuing professional development requirements for nurses.
KEY FACTS IN 2020

- MSF OCB cared for acutely malnourished children in eight Inpatient Therapeutic Feeding Centres (ITFCs) and 43 Ambulatory Therapeutic Feeding Centres (ATFCs).
- 22,411 beneficiaries were treated for acute malnutrition; 8341 in our ITFCs and 14,070 in our ATFCs.
- 552,381 beneficiaries were screened for their nutritional status in Operational Centre Brussels (OCB) projects, including in outpatient clinics, antenatal clinics, maternity services, postnatal clinics, vaccination campaigns and inpatient departments.
- Stabilisation and mortality rates in the ITFCs deteriorated slightly from last year.
- Less successful was the systematic screening in both inpatient departments (IPD) and outpatient departments (OPD) of advanced HIV and TB patients.

1. OVERVIEW

COVID-19 and its collateral damage had several impacts on regular nutrition activities including:
- negative impact on health-seeking behaviours – a decrease in active malnutrition screening and active case finding
- resultant increase of ITFC admission and complicated cases
- closure of facilities (Maiduguri and Kenema) – due to health care personnel contracting COVID-19, creating negative perceptions in the community

Due to forecasts of a poor outlook for food and nutrition security related to COVID-19, the initiation of a nutrition security surveillance system took off in 2020 in selected projects using newly-designed tools and with close support from headquarters.

Beyond care for malnourished children under five years, there was a focus on integrating nutrition care for hospitalised patients. The starting focus was to target advanced HIV and TB patients, in particular in the Conakry and Kinshasa HIV (SIDA) projects. The Conakry SIDA project took very progressive steps integrating nutrition care into their project. They included a proposal at the end of 2020 that included recruiting a nutrition focal point, changing nutrition product supplies and targeting the full continuum of care, for both inpatients and outpatients.
In 2020, two nutrition emergency interventions were conducted, one in South Sudan (Pibor) and the other in the Democratic Republic of the Congo (DRC) – Pool d’Urgence Congo (PUC) (Basankusu).

A focus was given to management of malnutrition in infants <6 months of age, particularly in projects in Conakry, Maiduguri and Kenema.

2. MAIN PROGRAMME ACTIVITIES

2.1. SET-UP AND LOCATION OF NUTRITION SERVICES

<table>
<thead>
<tr>
<th>Type of service</th>
<th>Countries and projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical projects/emergencies</td>
<td>Nutrition is the main activity</td>
</tr>
<tr>
<td>Nigeria (Borno, Maiduguri)</td>
<td></td>
</tr>
<tr>
<td>Integrated programmes</td>
<td>Nutrition is integrated into existing medical activities</td>
</tr>
<tr>
<td>Central African Republic (CAR) (Bangassou); DRC (Masisi, PUC); Guinea (Kouroussa); Sierra Leone (Kenema, Nongowa), South Sudan (Pibor, Doro, BNS), Venezuela (Anzoatégui); Mozambique (Cabo Delgado)</td>
<td></td>
</tr>
<tr>
<td>Targeted nutritional support</td>
<td>Nutrition support is targeted to patients with specific nutritional needs (e.g. patients with HIV, post-operative patients, pregnant and lactating women); or food protection rations are provided in food insecure areas</td>
</tr>
<tr>
<td>Active: DRC (Kinshasa), Guinea (HIV Conakry)</td>
<td></td>
</tr>
<tr>
<td>Inactive: Burundi (Arche); DRC (Masisi); Haiti (Tabarre); Iraq (Mosul), Lebanon (Bar Elias) South Sudan (Doro)</td>
<td></td>
</tr>
</tbody>
</table>

2.2. NUTRITION ACTIVITIES AND BENEFICIARIES TREATED

<table>
<thead>
<tr>
<th>Type of activity</th>
<th>Number of centres</th>
<th>Number of admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITFC</td>
<td>8 (total)</td>
<td>8341</td>
</tr>
<tr>
<td></td>
<td>7 (integrated paediatric or intensive care unit hospital services)</td>
<td></td>
</tr>
<tr>
<td>ATFC</td>
<td>43</td>
<td>14,006</td>
</tr>
<tr>
<td>Supplementary Feeding Centre (SFC)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Targeted nutritional support</td>
<td>2 active &amp; 5 inactive</td>
<td>ND</td>
</tr>
<tr>
<td>TOTAL</td>
<td>60</td>
<td>22,346</td>
</tr>
</tbody>
</table>

ITFC: Inpatient Therapeutic Feeding Centre; ATFC: Ambulatory Therapeutic Feeding Centre; ND: No data.

There has been a similar trend in admissions to ITFC and ATFC projects during 2020 compared to 2019. However, there were a few notable exceptions:

The Kenema project showed a 40% decrease in ITFC admissions from 2019; this could be accounted for by stricter admission criteria and COVID-19 related constraints.

The Maban project had a 60% decrease in ITFC admissions from 2019 due to closure of OPD activities in March 2020, handover of ATFC activities, inadequate referral mechanisms from partner NGOs and COVID-19.

The Anzoátegui project increased ATFC admissions by 60% over 2019. This was explained by the economic impacts of COVID-19, which resulted in fewer jobs and less access to food in a vulnerable population.

There was a noted 9% decline in the total number of ITFC admissions in 2020 compared to 2019, likely due to the closure of ITFCs during 2019 and 2020.

Overall, 2020 saw a 4% increase in ITFC admissions and 12% increase in ATFC admissions despite the closure of several ITFC and ATFC projects in 2019 and 2020.

In 2020, 22,254 children received nutritional treatment for acute malnutrition in OCB projects, an increase of 5%. Table 3 summarises the main indicators in both ITFCs and ATFCs.
**TABLE 3** Average Indicators for ITFC and ATFC, OCB 2020

<table>
<thead>
<tr>
<th>Nutritional Screening</th>
<th>ATFC</th>
<th>ITFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients screened</td>
<td>Total admissions</td>
<td>% cured</td>
</tr>
<tr>
<td>OCB average 2020</td>
<td>552,381</td>
<td>14,070</td>
</tr>
</tbody>
</table>

*LAMA: Left against medical advice – this is the preferred term for inpatient settings as opposed to defaulter, which is used for outpatient settings.

**ITFC**

The average stabilisation rate (the proportion of patients transferred from ITFC to ATFC to complete their treatment) in ITFCs for all OCB projects was 84.1% (ranging from 65.1% to 92.6%). This was above the OCB target of 80% and similar to 2019 (85.8%).

The average ITFC mortality rate across all OCB projects was 7.2% (range: 3.6% to 12%). This average was just over the OCB acceptable target of 5%. Mortality figures showed similar trends to 2019 with the exception of the Kenema ITFC, where it doubled. A possible explanation for this was revised admission criteria with patients who were more malnourished.

The Left Against Medical Advice (LAMA) rate for OCB ITFCs was 1.9% (ranging from 0.38% to 3.15%), well below the OCB target of <5%, and similar to 2019. This is an indicator of the quality of care in our ITFCs and especially highlights the good communication skills of our clinical and health promotion staff.

Average length of stay (ALS) was only reported by six projects, but was seven days (range 6.4-8.8). This is below the predicted average of 12 days. A notable change in ALS was in the Maiduguri project, where they reduced ALS from 10 to seven days, likely attributable to the introduction of the ITFC protocol.

The most common 10 morbidities leading to ITFC admission are shown in Figure 1. Diarrhoea, severe malaria, and pneumonia remain the important morbidities, as expected in most of our contexts and reported globally. There was a notable increase (60%) of admissions recorded as “failed appetite test” (no other diagnosis) in 2020 compared to 2019. These numbers were mainly from two projects, Maiduguri and Masisi.

**FIGURE 1** Top 10 most frequent morbidities leading to admission in Inpatient Therapeutic Feeding Centres (ITFC), OCB, 2020
ATFC
14,070 admission consultations and 39,637 follow-up consultations were carried out in ATFCs across OCB in 2020.

The average cure rate in ATFCs in all OCB projects was 80%, ranging from 63.0% (Kenema) to 84% (Maiduguri). The average defaulter rate in ATFCs across OCB projects was 8.3% (range: 5% to 17%). The OCB target is <15%, so our projects are doing well in this aspect. Kenema does have a notably higher defaulter rate and lower cure rate, which could be partially attributed to the large distances patients have to travel as well as COVID-19 related issues.

The average deterioration rate (referral from ATFC to ITFC) was 4.2% (ranging from 1.5% to 9.1%). There is currently no OCB target for this – data over the next few years will be used to establish a target. All projects except one had deterioration rates below 5%. Masisi in DRC remained the outlier with a rate of 9.1%; however, this was a significant improvement from 2019 when the deterioration rate was almost 20%.

NUTRITIONAL SCREENING
The total number of beneficiaries screened in OCB projects in 2020 was 552,381 patients, an increase of 33% from 2019 (372,695 patients).

There was a notable increase in nutrition screening in Sexual and Reproductive Health (SRH) activities in 2020 compared to 2019, particularly at Postnatal Care (PNC) level by 50%.

<table>
<thead>
<tr>
<th>Service/Activity</th>
<th>Total beneficiaries screened for nutritional status</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPD (all age groups)</td>
<td>224,179</td>
</tr>
<tr>
<td>OPD &lt;5y</td>
<td>233,342</td>
</tr>
<tr>
<td>ANC (pregnant women)</td>
<td>66,651</td>
</tr>
<tr>
<td>Maternity</td>
<td>46</td>
</tr>
<tr>
<td>PNC</td>
<td>10,814</td>
</tr>
<tr>
<td>Paediatric IPD</td>
<td>2422</td>
</tr>
<tr>
<td>General IPD</td>
<td>192</td>
</tr>
<tr>
<td>Vaccination campaigns</td>
<td>14,735</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>552,381</strong></td>
</tr>
</tbody>
</table>

OPD: outpatient department. ED: emergency department. ANC: Antenatal care. PNC: Postnatal care. IPD: inpatient department

3. OTHER ACTIVITIES
Considerable efforts and investments were placed in developing the clinical nutrition protocols and piloting them in key OCB projects in 2020 – particularly in advanced HIV and surgical projects. In addition, a new product was developed with Nutriset in 2020 that was intended to be piloted in one of OCB’s projects in 2021.

4. LOOKING BACK AND AHEAD
4.1. LESSONS LEARNED IN 2020
• As everywhere, there were major challenges in implementing COVID-19 adapted protocols due to varied contexts and projects. The approach to supporting the field with adapted protocols was likely not the most effective approach during these uncertain times.
• OPD activities, as well as integrated ATFC activities, where nutrition screening takes place, are vital components in the early detection of malnourished children under five years. When these activities are
not run by MSF in a given project, then establishing the referral mechanism and capacity building of the implementing partner NGO is crucial in running effective ITFC activities.

- Integrating nutrition care for patients outside the typical ITFC/ATFC programmes is complex and requires a lot of investment:
  - resources for nutrition supplies
  - HR training and capacity building
  - motivation and leadership by the project team
  - effective clinical nutrition protocols
  - effective planning and means of implementation

- There appeared to be an underestimate of the proportion of malnourished infants under six months of age admitted into ITFCs. This could be attributed to ineffective community nutrition screening due to difficulties in implementing Weight for Height measurements and a weak assessment process.

- Virtual field visits may sound “fancy,” but they are extremely challenging. A year with no field visits has led to virtual support to the field, with video calls, challenged by poor internet connection, and multiple email exchanges. They have worked quite well considering the circumstances, but do not replace “being there.”

4.2. PROSPECTS FOR 2021

- Finalise the clinical nutrition care protocols package that are being developed intersectionally with key contributions from OCB and Operational Centre Barcelona-Athens (OCBA).

- Integrate clinical nutrition care in Advanced HIV and Surgical projects through piloting the clinical nutrition protocols in various projects in 2021.

- Improve the assessment and management of malnourished infants <6 months in key ITFC projects.

- Enhance the Nutrition Security Surveillance approach in key project countries.

- Improve the Nutrition Emergency Preparation approach in key project countries.

- Improve Food Service Management in hospitals for inpatients.

- Enhance capacity of project teams (particularly national staff) to integrate nutrition care into the management of patients.

- Provide more extensive support to all nutrition projects in the East African Region.
OPERATIONAL RESEARCH & DOCUMENTATION

HIGHLIGHTS IN 2020

• The Luxembourg Operational Research Unit (LuxOR) and the Southern African Medical Unit (SAMU) implemented the operational research framework.

• 78 MSF Operational Centre Brussels (OCB) supported studies were published, covering 17 thematic areas in 17 different countries

• LuxOR has 72 studies ongoing focusing on operational research thematic domains such as environmental health (EH), Antibiotic Resistance (ABR), Sexual and Reproductive Health (SRH), outbreaks and vaccination.

• SAMU supported 42 publications in 2020 and is currently supporting 51 studies, focusing on HIV/tuberculosis (TB) in vulnerable groups, such as children and adolescents and key populations, on advanced HIV and newer drugs and regimens for drug-resistant tuberculosis (DRTB).

• Implementation of a strategy to offer close support to the pool of field epidemiologists and data managers.

1. OVERVIEW

The Luxembourg Operational Research Unit (LuxOR) and the Southern African Medical Unit (SAMU) coordinate and conduct research projects in close collaboration with field teams, operational cells, and international partners as part of the Operational Centre Brussels (OCB) Medical Department.

Operational research (OR) has become increasingly integral to Médecins Sans Frontières (MSF) activities, providing evidence that impacts MSF projects, the populations they serve and often, global health policy.

In 2019, a new research framework was developed and further implemented during 2020. The framework helps LuxOR and SAMU to validate and better structure OCB’s operational research projects and to assure they are responding to the priorities of MSF operations, are feasible and adequately resourced.

During 2020, OCB supported and published 78 studies, covering 17 thematic areas, in 17 different countries. LuxOR developed a strategic logframe for 2020-2023 dividing important action points and priorities into four main pillars: (I) integration of OR into MSF operations, (II) capacity building, (III) quality assurance, (IV) communication and dissemination.
During 2020, LuxOR, SAMU and other units from the Medical Department launched a system to offer close support to the pool of field epidemiologists and data managers, which included assigned epi-advisors and a community of practice.

2. MAIN PROGRAMME ACTIVITIES

2.1. OPERATIONAL RESEARCH ACTIVITIES

There are two main units supporting OR for MSF’s Operational Centre Brussels (OCB): the Southern African Medical Unit (SAMU), which is primarily responsible for research related to HIV/AIDS, Hepatitis C and tuberculosis (TB), and LuxOR, which leads on all other areas of research and related capacity building.

This year, the new research framework, developed and initiated in 2019, was further implemented to better structure OCB’s operational research efforts and to assure that they are responding to the priorities of MSF, are feasible and adequately resourced. The framework is a five-step process so that key stakeholders, both in the field and at headquarters, are involved. They must agree that the results of the research are important for MSF operations and/or have broader operational/policy implications. The five steps are: (1) research idea - usually from the field or operations, (2) concept note written up, (3) protocol development, (4) OR study carried out, and (5) dissemination of OR findings; policy and practice change. This process is designed to avoid poorly planned or under-resourced studies of limited value to MSF operations or policies.

LuxOR is organised so that research domains relevant to MSF’s operations have dedicated OR advisors who become familiar with the issues in them. The domains can be modified over time according to needs and priorities. In 2020, most of the focus was on trauma care, infectious diseases and migration (Figure 1). SAMU has continued supporting OR in our HIV and TB projects, focusing especially on paediatric and adolescent health, key populations and newer treatment regimens for drug-resistant tuberculosis (DRTB).

To strengthen research capacities and generate relevant operational research questions, OR team members regularly visit missions and projects to help develop research agendas and assist in data collection. Unfortunately, field visits were difficult during the pandemic. However, LuxOR advisors conducted OR visits, sometimes combined with gap fillings, as epidemiologist and/or medical coordinator in Belgium, Guinea, Burundi, and Brazil.

An important step taken in 2020 by LuxOR and SAMU was the implementation of a strategy to offer close support to the pool of epidemiologists by:

- providing continuous support to epidemiology and data management in the field, and to liaise with medical coordinators and others in the projects and the cells. Support is either direct or linking the field to a designated referent in headquarters, depending on the expertise required.
- setting up a community of practice (CoP) to encourage peer discussions and support, while ensuring access to a well-monitored and updated knowledge bank.

Operational research studies are published in peer-reviewed scientific journals, and the results remain openly available to researchers and the global humanitarian community. MSF has a policy of publishing in open access journals to ensure this access; it also maintains the “MSF Field Research” website, which contains all MSF-authored articles published in peer-reviewed journals available free of charge. In addition, the adoption of the Research Impact Monitoring Tool (REMIT), an MSF-wide research management and impact tool, has made concept notes and protocols available on this platform.

In 2020, 78 OCB supported studies were published covering 17 thematic areas (Figure 1). Unavoidable in 2020, six of these focused on COVID-19 and how tuberculosis services had to be sustained during the pandemic. While the largest number were studies based on retrospective data, there were significant numbers of prospective as well as qualitative studies, plus a number of others including case-series and mixed methods, illustrating the diversity of study methodologies employed.
2.2. CAPACITY BUILDING

For 2020, two dedicated Structured Operational Research Training courses (SORT-IT) were planned: one on antibiotic resistance (in Beirut), and the final module for the sexual and reproductive health (SRH) course. However, due to the pandemic, they were postponed to 2021.

Thanks to a close partnership with the Special Programme for Research and Training in Tropical Diseases (TDR) of the World Health Organization (WHO), support was promised for the antimicrobial resistance SORT-IT course in Low and Middle-Income countries. It is planned for mid-2021, virtually. In addition, a virtual, pilot version (e-SORT IT) of the third module of the SRH course was planned for early 2021, hosting a full writing module online with faculty and participants connected worldwide.

The Policy and Practice Module held in 2019 will be integrated into the three existing modules of the two SORT-IT courses proposed for 2021. This will become a key aspect of the courses and include field visits to ensure continuous support alongside projects and research cycles. Hands-on coaching for participants and their projects, including uptake of the study results, will be available.

3. HUMAN RESOURCES

The LuxOR team is currently composed of one programme officer, one qualitative research advisor (shared with SAMU), six OR advisors, one policy, practice, and communications advisor, one medical editor, and a rotation of two interns. Team members are distributed across Brussels, Luxembourg, Beirut and Canada. The SAMU team has one dedicated senior OR advisor/OR coordinator but all HIV/TB advisors and technical advisors directly and indirectly support research projects.

The positions of LuxOR Director and qualitative research mobile implementation officer (shared with SAMU) are currently open and will be filled in 2021.
4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

• There is a need to reinforce the awareness of ethics and data protection issues in our research projects, and to enhance our interaction with the MSF Ethics Review Board in a timely and constructive way.

• Challenges were still ongoing in the uptake of the Research Impact Monitoring Tool (REMIT), an MSF-wide research management and impact tool.

• Continuing efforts are being made to explore the possibilities of a collaboration with other institutions such as the Luxembourg Foundation, Institute of Tropical Medicine, London School for Tropical Medicine and Hygiene, and the Karolinska Institute. Possible areas are supporting PhD trajectories, funding of SORT-IT courses and other capacity building initiatives.

4.2. PROSPECTS FOR 2021

• Further implementation of the research framework across MSF OCB.

• Strong focus on research uptake and policy and practice implementation: ensure uptake strategies are implemented and followed up from the concept note stage, continuing throughout the OR study cycle.

• Support to the field epidemiologist group will be strengthened and coordinated on all different levels: profile validation, briefing and debriefing, training, and community of practice.

• Strong focus on operational research thematic domains such as environmental health (EH), Antibiotic Resistance (ABR), Sexual and Reproductive Health (SRH), outbreaks and vaccination.

• LuxOR will host an Antibiotic Resistance SORT-IT in Beirut in June 2021.

• Having REMIT up to date will be prioritised and followed up.
PAEDIATRIC CARE

KEY FACTS IN 2020

- A total of 16 projects in 13 countries provided inpatient department (IPD) care to paediatric patients, and 32 projects in 23 countries provided outpatient department (OPD) care to children.

- A total of nine projects in seven countries provided neonatal care in dedicated neonatal units.

- Where inpatient care occurred for children aged 0 to <15:
  - In 2020, the total number of neonatal patients admitted decreased by 13% and the total number admitted to paediatric IPDs decreased by 12% compared to 2019.
  - Paediatric IPDs accounted for 63.4%, neonatal wards for 19.4% and inpatient therapeutic feeding centres (ITFC) accounted for 17.2% of patients aged 0 to <15 admitted to hospitals.
  - In contrast, 38.3% of the <15-year-old mortality occurred in neonatal wards, 36.3% in paediatric IPDs, and 25.4% in ITFCs.

- Community-based care (clinical care outside of inpatient or outpatient sites) was provided in four sites to 44,498 children <5 years old.

1. OVERVIEW

In MSF Operational Centre Brussels (OCB) projects, paediatric patients are those aged 0 to <15 years. There were several events that affected the provision of paediatric care in 2020. Most notable was the COVID-19 pandemic leading to reductions or changes in activities at various sites and making supporting paediatric care challenging. Other key changes in 2020 were closures of projects where paediatric and neonatal care were provided, such as the Timergara CEmONC (Comprehensive Emergency Obstetric and Newborn Care) in Pakistan, Lesvos paediatric outpatient department (OPD) in Greece, and clinics in Akkar, Lebanon, Bhadrachalam, India and Mbare, Zimbabwe. There was also a reduction in the response to non-COVID-19 epidemics that required paediatric inpatient care, as shown by a marked decrease in measles epidemics. On the other hand, this was the first full year of operation for two new projects with large paediatric components, Kenema and Niono. The Muyinga project in Burundi, providing wound care to mostly children, also expanded in 2020. Community-based healthcare for children, specifically packages like integrated community case
management (iCCM) of childhood illnesses, was carried out in four projects and is described for the first time in this year’s report. Children continue to be included in MSF OCB vaccination campaigns, malnutrition screenings, and mental health services.

2. MAIN PROGRAMME ACTIVITIES

In 2020, OCB provided inpatient care to children in 16 projects in 13 countries. The majority of paediatric patients were admitted to dedicated paediatric or general inpatient departments (IPD), but some were admitted to vertical projects such as surgical IPDs in Burundi, Gaza, Lebanon and Iraq. A total of 33,254 children were admitted to IPDs in 2020, a 12% decrease from 2019. This trend was possibly due to both a decrease in emergency interventions, such as for cholera or measles, as well as the secondary effects of the COVID-19 pandemic. In 2020, 88% of projects reported admission data on all age groups (<5, 5 - <15 and >15), compared to 59% in 2019. Improved reporting may account for most of the increase seen in the proportion of children aged 5 to <15 in IPDs (22% in 2020 vs. 15% in 2019). Two paediatric IPDs, Kenema, Sierra Leone and Niono, Mali, completed their first full year of operation in 2020. The majority (77%) of paediatric inpatient care activities were in sub-Saharan Africa, while remotely supported projects in Syria accounted for most of this activity in other regions. In 2020, 16.8% of patients who underwent operations in surgical projects were <15 years and 17.4% of patients admitted to surgical wards were children <15 (in projects where age was captured).

Paediatric inpatient morbidities and causes of mortality are detailed in Figure 1. The morbidity data presented is for projects with dedicated paediatric IPDs and the surgical project in Gaza. Other sites (general IPDs) did not report on all morbidities in 2020. Severe malaria continued to be the leading cause of paediatric morbidity (60%) and mortality (50%) among children. “Other” diagnoses, representing patients who had diseases that were either unspecified or not included in OCB projects’ standard morbidity list, accounted for 17% of morbidity. Paediatric mortality in inpatient departments was unchanged from 2019 to 2020 at 2.2%. For MSF projects, the threshold for mortality is <5%. For all children aged 0 to 15, including neonates and children admitted in inpatient therapeutic feeding centres (ITFC), overall child mortality in MSF OCB projects was 3.9% in 2020. Paediatric IPD mortality decreased from 2018 to 2020 in most projects except for Bangassou, Central African Republic (CAR), which showed a slightly upward trend. Two of the 12 projects, specifically Kenema and Niono, reported IPD exits that were above this threshold in 2020 (see annexes for mortality per project for 2020 and the trends in paediatric mortality from 2018 to 2020). In projects that reported exits segregated by age, mortality in children <5 years was lower (2.5%) than that of older children aged 5 to <15 (3.1%).

**FIGURE 1** Main morbidities and causes of mortality in paediatric inpatient departments, 2020

*Other: Diseases either unspecified or not included in a project’s standard morbidity list

LRTI: Lower respiratory tract infection
OUTPATIENT AND COMMUNITY-BASED PAEDIATRIC CARE

In 2020, 559,537 children <15 were seen in MSF OCB OPD clinics at 32 projects in 23 countries. This was a 51% decrease from 2019. For projects where age was recorded, children <15 comprised 60% of all patients. As for paediatric IPD patients, there was an increase in the proportion of children aged 5 to <15 seen in clinics (28% in 2020 vs. 20% in 2019), partially due to improved reporting by the projects for these age groups. Of the 32 projects, 39% were providing care to children in vertical or non-traditional OPDs, e.g. post-surgical, adolescent, non-communicable diseases and special wound care clinics. While MSF closed some OPD activities and had fewer OPD activities associated with emergency interventions in 2020, there was an increase in paediatric OPD activities in Niono, Mali, and in Cameroon. OPD morbidities were not reported in detail for the 2020 report.

In the last few years, several projects have had community-based care for children as part of their programmes. Data from these programmes are described for the first time in this report. In 2020, OCB provided care to 44,498 children <5 years old via community-based care in four projects. Of these, three provided this care through the framework of integrated community case management of childhood illnesses (iCCM). This is a programme where, when fully implemented, community health workers care for uncomplicated malaria, diarrhoea and acute respiratory infections (ARIs). They also screen for malnutrition, assess and refer children who are sick to clinics and often report on notifiable diseases. Only the programmes in Niono, Mali, and Cameroon provided the full package of iCCM for all three diseases while the others did not include management of ARIs. The programme operating in Bamenda, Cameroon, had an expanded service to children and adults in the community, including care for other diseases, mental health services, and sexual violence. More data on the individual projects and summary data from these programmes are in the Annexes.

NEONATAL CARE

In 2020, 8356 babies were admitted to newborn units (NBU) in nine projects in seven countries. This was a 13% decrease that was mostly due to the closure of Timergara, Pakistan, in late 2020 and reduced deliveries in Khost, Afghanistan, due to COVID-19 restrictions. As in 2019, 14% (range: 3-21%) of all babies born in these facilities were admitted to NBUs. Nearly all (8/9) of the projects with NBUs were in Comprehensive Emergency Obstetric and Newborn Centres (CEmONC) with Doro, South Sudan, being the exception. Low birth weight babies (LBW: <2500g) represented 32% of babies admitted to NBUs in 2020. Continuous positive airflow pressure (CPAP) use continued in the NBU in Khost, Afghanistan and microbiology continued to be provided in Castor, CAR.

The main morbidities among newborns admitted (Figure 2) were conditions related to prematurity (such as apnoea of prematurity, necrotising enterocolitis, and respiratory distress syndrome at 21%), birth asphyxia (15%), risk of sepsis (11%) and sepsis (9%). Low Birth Weight (LBW) babies were nearly twice as likely to leave against medical advice (LAMA) than babies ≥2500g in NBUs. This was possibly related to longer hospital stays due to prematurity. Neonatal

*Other: Diseases either unspecified or not included in a project’s standard morbidity list
TORCH: Toxoplasmosis, Other Agents, Rubella (also known as German Measles), Cytomegalovirus, and Herpes Simplex.
mortality has been trending down in MSF OCB projects since 2018 (see Figure 3). Prior to that, from 2012 to 2017, it ranged from 12-17%. Mortality remained above the acceptable threshold (<15%) in three of the nine projects in 2020 while other sites showed encouraging trends as shown in Figure 3. LBW babies accounted for 62% of all neonatal mortalities. Conditions related to prematurity accounted for 39% of mortality; birth asphyxia was the second most common cause of death (34%) and neonatal sepsis accounted for 11% of neonatal deaths.

The four largest projects accounted for 72% of neonatal inpatient care: Bangui, CAR, (27%), Khost, Afghanistan, (21%), Timeragara, Pakistan, (15%), and Masisi, Democratic Republic of the Congo (DRC) (8%). These projects collected data in a standardised neonatal database. The following information on outcomes, stratified by weight and neonatal care provision, was generated from the following database.

- Outcomes in different weight categories were similar to those seen in 2019, though LAMA was noted to be higher on average in 2020 and was at or above threshold values (≤5%) for very low birthweight babies (VLBW: 1000g-1499g) and extremely low birthweight (ELBW: <1000g) babies.
- Mortality decreased in the VLBW and ELBW weight groups when compared to 2019, but was relatively unchanged for babies weighing ≥1500g at birth across the projects.
- In sites where neonatal intensive care units (NICU) admissions were monitored, 28% of newborns required admission to the NICU.
- Almost all patients (98%) leaving Bangui, CAR, received Hep B vaccination but other projects’ vaccination data were either incomplete, missing or below the recommended threshold value.
- Neonatal outcomes stratified by weight across these projects are shown in Figure 4.
4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

• Our ongoing operations were sorely unprepared for the COVID-19 pandemic in many ways. This was clear through the response in projects that directly or indirectly affected paediatric care. While there was sufficient and timely guidance created on how to modify care for children during the pandemic, this guidance did not reach the staff in a timely manner to benefit care. The communication gaps, especially to front line workers and national staff, were glaring.

• Training also was greatly impacted by the pandemic, with some paediatric trainings planned at project sites being cancelled and others postponed.

• On the other hand, reduced mobility due to the pandemic led to new ways of working with projects using virtual meetings that became more inclusive and frequent with field teams as the pandemic progressed. Hopefully, this type of support can continue even after the pandemic.

• In 2020, greater support was needed for paediatric OPD and community-based child health programmes as more projects began to implement them and MSF guidance on these topics was sparse. Other projects were also scaling up their paediatric IPD services and this required planning for human resources, training prior to opening, design considerations, etc. This highlighted that more standardised programme guidance, not just medical management alone, is strongly needed in paediatric projects.

4.2. PROSPECTS FOR 2021

• For 2021, the knock-on effects of the pandemic on paediatric services remain. Surveillance for these issues should be an active part of our work in 2020. There is a need to work with operations to monitor rises in vaccine-preventable diseases, persistent loss of access to care for children, increases in neonatal mortality and new/worsening food insecurity in 2021.

• The paediatric training opportunities available in OCB are limited. In 2021, more resources and time should be allocated to defining the training packet for OCB using both intersectional trainings as well as sectional trainings. The goal should be to mobilise trainers on paediatric topics to support staff as close to their project sites as possible.
• Community-based and outpatient paediatric care continue to expand in OCB, but guidance is inconsistent. In 2021, resources to provide quality community-based and outpatient paediatric care will be compiled and made more accessible to better facilitate project work. This will include use of the eCARE tool in targeted projects, the expansion of iCCM activities in others and the introduction of the best practices for paediatric OPDs in established paediatric clinics.

• Most of these ambitions overlap with the intersectional push for providing tools to the field in paediatric care with materials related to clinical care (including guidelines) and programme planning for both inpatient and outpatient care. Therefore, tools for these topics will be made available in an intersectional paediatric toolbox in 2021.
HIGHLIGHTS OF 2020

• Clarification regarding the roles and responsibilities between Pharma and Supply remain to optimise the work.

• Gradual roll-out of the Medical Standard List (MSL) tool started, providing better support to create, maintain and validate MSLs, coherent with validated treatment guidelines and in line with medico-operational choices.

• A Pharmacist position has been integrated into the Operational Centre Brussels (OCB) International COVID-19 Task Force in order to deal with the huge amount of support requested for strategic management and quality assurance of medicines and medical devices.

• Significant support to missions to estimate their needs in personnel protective equipment (PPE), as well as strong involvement in collecting stock inventories was provided in the first months of the COVID-19 pandemic.

• The COVID-19 pandemic caused a major disruption to planned field visits for support of Good Pharmacy Practices, and Pharmacy Analysis and Coaching. Nonetheless, early in 2020, field visits were made to the Venezuela and Brazil missions.

• 2020 also saw an unprecedented volume of Local Purchase Requests in particular, due to COVID-19 challenges, and especially for medical devices, with PPE a major focus.

• Evaluations of local pharmaceutical markets were performed intersectionally in 10 countries.

• Start of the UniField Pharmacy Working Group to enhance general improvements in the UniField tool from the medical/pharma perspective.

• Creation of the OCB Distribution Pharmacies concept paper.

1. OVERVIEW

The year 2020 was marked by the COVID-19 pandemic. Ongoing support on quality assurance of medical products was provided to all Operational Centre Brussels (OCB) missions, with attention to importation...
constraints seen in Nigeria, Pakistan, Bangladesh, Bolivia, Turkey, Venezuela, Mozambique, Iraq and Palestine, Lebanon, Brazil and Ukraine. Support to the medical and supply teams for quality monitoring, rational medical procurement, and data quality continued to improve in 2020.

The quality of medication therapy can be optimised by improving the organisational structures through which medication therapy is provided. Medical Standard Lists (MSL) are a key element in such strategic medicines management. Additionally, their application for purchase ordering and stock management allow streamlining supply. A tool to support missions better in creating, maintaining and validating MSL, containing template lists for different medical activities, has been developed and its gradual roll-out in OCB missions has started.

The close collaboration with the Supply Chain and Logistics Departments remained a fundamental feature to maintain a holistic approach and assure quality in the transportation and storage of medical products.

The Pharmaceutical Logistics Technical Family, unique to OCB, includes all the technical aspects aimed at ensuring that medical products are transported and stored in a way that they remain effective and safe throughout the journey from manufacturers to patients. As well as ensuring the quality of the medical products, this support is aimed at reducing potential economic losses due to improper storage and transportation.

Interdepartmental collaboration was demonstrated by prompt involvement of a pharmacist from the very beginning of the design phase for medical warehouses and pharmacies.

From the early beginning of COVID-19, a joint supply/med “covid-19-need-orders-helpdesk” was created to give assistance to all projects in OCB with completing the “Order PPE calculation tool,” aiming to collect supply estimations for 90 days of COVID-19 response. In parallel, weekly inventory levels on critical items were manually collected from 10 medical stocks managed in Isystock, to feed in the online central file while the other stock levels data were extracted automatically from Unifield.

The focus continued to be on Unifield (UF) deployment and the medical stock integration process under the Supply Department. Special technical support was provided in the management of Isystock software in two projects (Brazil and Venezuela) and in the preparation of the monthly medical stock report in UF adapted to the set-up of VISU (Venezuela Intersectional Supply Unit).

This year, the Pharmaceutical Unit continued supporting the field on the implementation of Good Pharmacy Practice (GPP) at end-user pharmacy level in OCB projects. No implementation visits were possible in 2020, but induction plans, training material and briefings were ensured to many field pharmacists to guarantee its implementation and sustainability at project and mission level.

2. MAIN PHARMACY ACTIVITIES

2.1. THE MSF QUALITY ASSURANCE SCHEME

2.1.1. IDENTIFICATION AND VALIDATION OF DRUG SOURCES

<table>
<thead>
<tr>
<th>Validation route</th>
<th>Drug dossiers approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSF full product assessment*</td>
<td>9</td>
</tr>
<tr>
<td>Declaration of equivalence (DoE)</td>
<td>26</td>
</tr>
<tr>
<td>Medical Director Waiver**</td>
<td>1</td>
</tr>
<tr>
<td>WHO pre-qualification</td>
<td>35</td>
</tr>
</tbody>
</table>

* In addition, three variations were assessed.
** Exceptional approval based on risk/benefit analysis. There were no new approvals, and four have been extended.
• Eleven product dossiers were monitored, as part of the MSF Quality Assurance Scheme.
• Three spontaneous variations were submitted by the manufacturer and assessed.
• Due to the COVID-19 pandemic, MSF International did not conduct any Good Manufacturing Practice (GMP) audits of manufacturers.

2.1.2. ALERTS ON QUALITY AND BATCH RECALLS

Reports on quality are followed by OCB Supply Centre, MSF Supply, and by the MSF International Office.

• Number of claims received by MSF Supply in 2020: seven
• Five batch recalls in 2020

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Quality alert</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Batch recall</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>3</td>
<td>8</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Total number of quality problems reported</th>
<th>International Procurement source</th>
<th>Local Procurement source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>18</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>2016</td>
<td>19</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>2017</td>
<td>14</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>2018</td>
<td>15</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>2019</td>
<td>70*</td>
<td>57</td>
<td>13</td>
</tr>
<tr>
<td>2020</td>
<td>79*</td>
<td>53</td>
<td>26</td>
</tr>
</tbody>
</table>

* For drugs = 33 quality-related problems in total (25 for International Procurement and 8 for Local Procurement)/For Medical Devices = 32 quality-related problems in total (27 for International Procurement and five for Local Procurement).

2.2. MEDICAL PROCUREMENT

2.2.1. MSF EXPENDITURE

The total medical expenditure for OCB for medicines, vaccines, small medical supplies, medical equipment and kits in 2020 was €34.3 million, of which €23.9 million were procured through MSF Supply. This amount represents approximately €2.7 million more than in 2019 (Table 4).

<table>
<thead>
<tr>
<th>Medical items</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicines</td>
<td>22.5</td>
<td>14.9</td>
<td>18.8</td>
<td>14.8</td>
<td>17.5</td>
<td>15.0</td>
</tr>
<tr>
<td>Vaccines</td>
<td>1.1</td>
<td>1.6</td>
<td>1.5</td>
<td>1.2</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Therapeutic food</td>
<td>-</td>
<td>0.9</td>
<td>0.8</td>
<td>0.9</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Small medical supplies</td>
<td>6.8</td>
<td>5.2</td>
<td>6.9</td>
<td>6.5</td>
<td>7.3</td>
<td>12.0</td>
</tr>
<tr>
<td>Medical equipment</td>
<td>3.3</td>
<td>2.6</td>
<td>3.9</td>
<td>4.2</td>
<td>4.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Medical kits</td>
<td>1.3</td>
<td>1.1</td>
<td>0.9</td>
<td>0.8</td>
<td>1.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Total</td>
<td>35.0</td>
<td>25.4</td>
<td>32.1</td>
<td>28.4</td>
<td>31.6</td>
<td>34.3</td>
</tr>
</tbody>
</table>
Expenditure on medicines: five missions out of 36 contributed to approximately 47% of the total value (Figure 1).

Twenty-four (24) items of the medical procurement list were responsible for 20% of the total expenditure of MSF Supply OCB medical turnover (€27.8 million).

These 24 items included: alcohol-based hand rub, PPE (gloves, procedure masks, respirators, coveralls) and medical equipment (pulse oximeters, oxygen concentrators and multi-parameter bedside monitors), eight anti-infective medicines (five antibacterials - one each of: cytotoxic, antiviral, antimalarial, antifungal and antymycobacterial), diagnostic tests (HIV), test cartridges, contraceptive implants, two immunoglobulins, pain medication, gauze compresses and therapeutic food. Details are in Table 5.

### Table 5: Top 24 items responsible for 20% of the 27.8 M€ MSF Supply medical turnover for OCB in 2020

<table>
<thead>
<tr>
<th>Description</th>
<th>Expenditure (€)</th>
<th>% of Total turnover (27.8M€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELAMANID, 50 mg, tab., blister</td>
<td>492,286</td>
<td>1.8%</td>
</tr>
<tr>
<td>ALCOHOL-BASED HAND RUB, solution, 500 ml, bot.</td>
<td>466,928</td>
<td>1.7%</td>
</tr>
<tr>
<td>RUTF, peanut paste, 92 g</td>
<td>424,598</td>
<td>1.5%</td>
</tr>
<tr>
<td>GLOVE, EXAMINATION, latex, s.u. non sterile, medium</td>
<td>298,072</td>
<td>1.1%</td>
</tr>
<tr>
<td>PROCEDURE MASK, type IIR, earloops, s.u.</td>
<td>265,478</td>
<td>1.0%</td>
</tr>
<tr>
<td>DOXORUBICIN HCl, pegylated liposomal, 2 mg/ml, 10 ml vial</td>
<td>262,331</td>
<td>1.0%</td>
</tr>
<tr>
<td>LEVONORGESTREL implant 2 x 75 mg + trocar</td>
<td>253,041</td>
<td>1.0%</td>
</tr>
<tr>
<td>OXIMETER, PULSE (Masimo RAD-5) + accessories</td>
<td>236,378</td>
<td>0.9%</td>
</tr>
<tr>
<td>AZITHROMYCIN, 500mg, powder, vial</td>
<td>233,399</td>
<td>0.8%</td>
</tr>
<tr>
<td>PARACETAMOL (acetaminophen),10mg/ml, 50ml, flex.bag PVC free</td>
<td>224,437</td>
<td>0.8%</td>
</tr>
<tr>
<td>IMMUNOGLOBULIN HUMAN anti-D, 300µg, syringe</td>
<td>223,937</td>
<td>0.8%</td>
</tr>
<tr>
<td>CONCENTRATOR O2 (New Life Intensity) 10l, 230V, 50 Hz + acc.</td>
<td>216,134</td>
<td>0.8%</td>
</tr>
<tr>
<td>MONITOR NIBP (Dinamap Carescape V100)</td>
<td>204,056</td>
<td>0.7%</td>
</tr>
<tr>
<td>AMPHOTERICIN B liposomal complex, 50 mg,powder, vial</td>
<td>198,299</td>
<td>0.7%</td>
</tr>
<tr>
<td>RESPIRATOR FFP2/N95 + IIR, unvalved, duckbill L</td>
<td>191,649</td>
<td>0.7%</td>
</tr>
<tr>
<td>(CD4 analyser PIMA) TEST CARTRIDGE, 260100100</td>
<td>175,946</td>
<td>0.6%</td>
</tr>
<tr>
<td>IMMUNOGLOBULIN HUMAN ANTITETANUS, 250IU/ml, syr.</td>
<td>174,766</td>
<td>0.6%</td>
</tr>
<tr>
<td>CEFTRIAXONE sodium, eq. 1 g base, powder, vial</td>
<td>171,365</td>
<td>0.6%</td>
</tr>
<tr>
<td>COMPRESS, GAUZE, 10 cm, 12 plies, 17 threads, sterile</td>
<td>168,067</td>
<td>0.6%</td>
</tr>
<tr>
<td>ARTESUNATE 60 mg, powder, vial +NaHCO3 5% 1ml +NaCl 0.9% 5ml</td>
<td>164,474</td>
<td>0.6%</td>
</tr>
<tr>
<td>COVERALL, no hood, L (Tychem QC 125T)</td>
<td>161,776</td>
<td>0.6%</td>
</tr>
<tr>
<td>HIV 1 + 2 TEST (Determine), ser/pl/wb, 1 test 7D2343</td>
<td>161,092</td>
<td>0.6%</td>
</tr>
<tr>
<td>COTRIMOXAZOLE, 800 mg / 160 mg, tab.</td>
<td>154,856</td>
<td>0.6%</td>
</tr>
<tr>
<td>SOFOSBUVIR, 400mg, tab.</td>
<td>150,446</td>
<td>0.5%</td>
</tr>
</tbody>
</table>
2.2.2. LOCAL PHARMACEUTICAL MARKETS

During 2020, evaluations of local pharmaceutical markets were conducted in 10 countries. Approval outcomes are shown in Table 6. Pharmaceutical market evaluations reflected the need for local procurement in countries where MSF either could not import medicines or faced importation constraints. Levels of reporting for local procurement continued to increase but remained sub-optimal in some countries. The risk/benefit evaluation of both local procurement and final approval often relied on scarce evidence and information.

**TABLE 6 Evaluation of local pharmaceutical markets (2015-2020)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of manufacturers approved</th>
<th>Number of wholesalers approved</th>
<th>Number of countries evaluated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>7</td>
<td>106</td>
<td>14</td>
</tr>
<tr>
<td>2016</td>
<td>13</td>
<td>115</td>
<td>20</td>
</tr>
<tr>
<td>2017</td>
<td>13</td>
<td>127</td>
<td>14</td>
</tr>
<tr>
<td>2018</td>
<td>9</td>
<td>119</td>
<td>14</td>
</tr>
<tr>
<td>2019</td>
<td>14</td>
<td>71</td>
<td>11</td>
</tr>
<tr>
<td>2020</td>
<td>0</td>
<td>40</td>
<td>10</td>
</tr>
</tbody>
</table>

Regarding medical procurement systems, 24 out of 35 missions did not follow MSF’s primary procurement option completely - importation only from MSF Supply Centres. Nine missions relied solely on the local market for their medical procurement; six received some of their medicines from the public distribution flow, and the remainder from international procurement. The remaining nine missions faced difficult importation regulations, leading to sporadic local purchases (Figure 2).

Among missions that purchased medicines locally, two were in highly regulated countries (Belgium and Greece), ten had a database implemented (Lebanon, Egypt, India, Kenya, Indonesia, Nigeria, Pakistan, Turkey, Palestine and Ukraine), 19 submitted validation forms for local purchase approval, and four missions purchased locally without any recommendations regarding quality (South Africa, Burundi, Ecuador and Malawi).% indicate the amount spent per country on medicines procurement as proportion of the total OCB expenditure in medicines.
2.2.3. COUNTRY REGULATIONS AND IMPORTATION CHALLENGES

MSF is confronted with constant changes in country pharmaceutical policies and regulations, which have a direct effect on operations. The tightening up of individual country importation regulations does not necessarily mean an increase in the stringency of the National Drug Authority; sometimes it is motivated by economic pressure from local companies.

Supplier constraints such as embargoes or those linked to product registration in destination countries remain an increasing concern at Supply Centre level. The need to respect local legal requirements for importation under humanitarian exemptions must continue. However, these challenges significantly affected the timely delivery of supplies to the field.

2.3. GOOD DISTRIBUTION PRACTICES (GDP) AND THE COLD CHAIN

Compliance for good storage and distribution practices is nowadays perceived by medical, supply chain, and logistic staff as a fundamental prerequisite for the quality of the therapies provided to patients. The main axes for 2020 were training, field visits (Sierra Leone), second-line support (e.g. the setup of a multi-antigen vaccination campaign in Venezuela), interdepartmental communication and the draft of the first OCB Good Storage and Distribution Practices guidelines (to be disseminated by Q3 2021).

Specific support was provided to ensure that the distribution of medical items complied with the minimum requirements set by the World Health Organization (WHO) and national drug regulatory authorities. This meant changing the process so that the distributing pharmacies were the key sources of supply to ensure Good Pharmaceutical Practices (GPP).

Specific support also was provided for the design of new medical warehouses (Central African Republic (CAR), Bangladesh, Nigeria and Afghanistan), the rehabilitation plan (Democratic Republic of the Congo (DRC)) and the pharmaceutical setup of new missions (Yemen).

Support for cold chain breakdown follow-up was guaranteed through “Dr Cold Chain.” It provided feedback on field cold chain breakdowns and ensured support for corrective and preventive measures, promoting communication between the different departments involved. In 2020, it provided feedback for about 120 cold chain breakdowns coming from 26 different missions.

2.4. MEDICAL STOCK MANAGEMENT

- Five additional medical stocks were integrated into four missions in 2020 bringing the total to 56 and representing 86% coverage. Ten stocks were awaiting integration, provided that the requirements were met. Unifield was used in the 54 stocks managed by supply (except in the Kenya Supply Unit (KSU) and Syria) and in half of the non-integrated stocks (nine), the other half was mostly managed with Isystock.

- As Isystock was being utilised at 62% of hospitals/end-user units level (13 out of 22 stocks, seven stocks being potentially integrated), and with the development of the new Version 4, the tool will perform more functions for pharmacy management. This will make the handover smoother when it is planned for 2021.

- The scope of the “OCB Medical Stock Management Policy” was extended to “OCB medical items management policy,” but the document could not be completed in 2020.

- The supply intersection replenishment rules project in Unifield, whose design began in 2019 and completed its development by the end of 2020, was not validated by the medical director due to concerns on the lack of control of the tool for basic functions. Also, since tests revealed certain irregularities in calculations, deployment will have to be postponed.

2.5. PHARMACY MANAGEMENT AND GOOD PHARMACY PRACTICE (GPP) IN END-USER PHARMACIES

Despite the COVID-19 pandemic, a combined long-term pharmacy analysis and a coaching visit were made to Venezuela and Brazil during Q1.
Due to travel restrictions, efforts were made and time was dedicated to improve tools and processes in OCB.

**DISTRIBUTION PHARMACY**

Field visits by different members of the Pharmaceutical Unit highlighted that after the integration of medical stocks under supply management, there was a reduction of pharmaceutical services, which led to an impact in the quality of care provided in MSF health facilities and on resource allocation. For this reason, the Pharmaceutical Unit compiled a document that was shared with different directors to clarify the key differences between a medical warehouse and a distribution pharmacy.

Continuous support was given to identify projects where it was necessary to establish a distribution entity. Discussions in the Kunduz, Kenema and Bar Elias projects were held to define what would be the best stock management strategy and what entity (distribution pharmacy or medical warehouse) would best fit the medical needs for those projects.

The Pharmaceutical Unit continued to support different missions and projects on how to improve medical stock management and re-introduced distribution pharmacies into key OCB projects. Further discussions and clarifications continued to be necessary to identify minimum pharmacy requirements to provide quality care to the beneficiaries.

**UNIFIELD PHARMA WORKING GROUP**

In late 2019, the UniField Pharma Working Group (WG) was created to support medical initiatives and provide input in the UniField system, with its kick-off in January 2020. This group was composed of four Operational Centre pharmacists (Operational Centre Amsterdam (OCA), OCB, Operational Centre Geneva (OCG) and Operational Centre Paris (OCP)), the pharma representative to the UniField WG (Pharma-BRM) and the International Office Operational Pharmacist. The aim was to define and to follow up the enhancement of general improvements in UniField from the medical/pharma perspective. To do so, a thorough assessment of its functionalities was made and a list of requirements was drawn up by the UniField Pharma WG and is being discussed with the UniField Supply Working Groups.

**MEDORDER TOOL**

Due to the lack of a standard tool for elaboration of medical orders in OCB, an agreement was established with OCG to deploy the MedOrder Tool in OCB missions. OCG has invested in the Tool in order to offer a solid, comprehensive, user-friendly software for the production and the validation of medical orders, budget and budget review at project and coordination level. The deployment plan started in the Venezuela mission in December 2020 and more missions have already requested this tool.

**3. OTHER ACTIVITIES**

**3.1. PHARMA UNIT**

In 2020, the Mobile Implementation Officer (MIO) Hospital Pharmacist became part of the Pharma and Hospital Management Units, focusing on the vertical implementation of pharmacy management practices in selected OCB hospitals.

**3.2. FIELD PHARMACY POSITIONS**

During 2020, there was a total of 102 field pharmacy positions across OCB missions (5% more than 2019), of which 94 were held by qualified pharmacists (92%, 2% lower than in 2019). These included an emergency position in Yemen in Mocha Hospital, and COVID-19-related emergency positions in Yemen, Belgium and Brazil. One temporary support/coaching position was included, as well as one temporary maternity cover (KSU, Kenya) and two intersectional positions (Pakistan, Nigeria). The coverage of expatriate posts across all OCB missions in 2019 was 92% for PharmaCo/Mission Pharmacist positions (same as in 2019) and 81% for project/other pharmacy positions (5% lower than in 2019). The reduction in coverage for project/other pharmacy positions reflected the COVID-19 challenges and resulted in a long-term gap in Masisi. During 2020, there were 43 expatriate departures to cover 33 positions, of which three were opportunity posts (compared to 42 departures...
to cover 35 positions during 2019). Of the expatriate departures in 2020, only four (9%) were first mission – unfortunately a significant drop even from the low level of 2019. COVID-19 caused five first-mission positions to be either cancelled or put on stand-by for at least six months.

3.3. TRAINING

In 2020, all the usual annual pharmacy training sessions (two intersectional courses: Pharmacy and Medical Stock Management [PMSM] and the Pharmacy Training course), were cancelled due to COVID-19. Others were also cancelled: First Line Medical Training [FLMT], Basic Logistics Course [BLoC], Hospital Management Team Training [HMTT], Supply Management Training [SMT] and Project Medical Management Training [PMMT]. The Face to Face Preparation for Departure (PPD) training had to be adapted to “online” training that considerably reduced the time allocated and quality of the information.

4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

- The year 2020 seriously tested the OCB quality assurance (QA) mechanism for support of local purchases (LP). Fortunately, there was a strong uptake from the majority of missions in following the correct QA procedures, as well as flexibility of the OCB Pharma Unit to offer rapid and pertinent support on LP even during a global pandemic.

- Activities inside the European Union presented many challenges due to increasing pharmaceutical regulations that added more demands for compliance for MSF Procurement Centres.

- Individual country constraints on pharmaceutical importation coupled with increasing suppliers’ constraints remained a growing challenge for MSF operations.

- The deployment of field pharmacists was not just a matter of quality assurance and pharmaceutical regulations compliance but also a method to monitor the effective deployment of financial resources and to avoid losses.

- The roll-out of the Medical Standard List (MSL) tool started in OCB missions globally, requiring the migration of locally created article codes into MSF’s Central database (UNIDATA), and the creation of templates or “model lists” of articles for specific medical activities, coherent with validated treatment guidelines, to better guide field article selection.

- A holistic approach is required, involving different stakeholders, to tackle process and system incoherencies related to purchase ordering and stock management.

- There needs to be some clarification of the roles and responsibilities between Supply and Pharma teams and their respective scope of actions.

- Getting good data quality in UniField remained a challenge and despite the accessibility of support tools such as “UF Self Inspection,” “How to clean data base” and “Continuous Improvement,” the lack of face-to-face (F2F) training due to the COVID-19 pandemic has not helped matters.

- Continued collaboration between Pharma and Supply teams is required to fulfil the medical needs for medical stock management in UniField.

- There is a common lack of understanding on the core differences between a medical warehouse and a distribution pharmacy; further discussions and clarifications need to take place, along with correct supporting documentation.

4.2. PROSPECTS FOR 2021

- Reinforce the interdepartmental (Medical, Supply Chain, and Logistics) collaboration and communication on pharmaceutical-related issues.
• Continue collaboration with the International Office and other sections on the harmonisation of pharmacy-related policies.

• Provide ongoing field support for local market assessments.

• Work on updating all OCB Standard Operating Procedures and tools to create an “OCB Quality Assurance Package” for three main areas: Local Purchase, Donations, and Quality Complaints.

• Finalise the first MSF guidelines for Good Storage and Distribution Practices.

• Contribute to finalising the first intersectional Cold Chain Guidelines.

• Continue the integration process and UniField deployment with appropriate training and follow-up. Continue testing the replenishment rules in UniField.

• Finish the paper on “OCB medical items management policy,” including clear definitions on roles and responsibilities and the action scope of everyone.

• Hand over Isystock to the Medical Department with the deployment of Version 4.

• Align the implementation of the Medical Standard List tool in OCB missions globally, MSL tool functionalities and related systems and processes in the area of purchase ordering and stock management (such as MSF Supply Portal, UniField, Isystock), in order to move towards a more lean, efficient and transparent set-up.

• Improve the medication use process through its organisational set-up.

• Foster an environment that promotes the safe, efficacious, and cost-effective use of medications.

• Develop a hospital pharmacy management guideline with a focus on pharmaceutical care.

• Finalise a guideline and appropriate tools for Drug and Therapeutics Committees (DTCs) and deploy medication committees (DTCs, Antimicrobial Stewardship Committees) to reinforce multidisciplinary collaboration within the hospital team.

• Develop a hospital pharmacy training package for pharmacists and hospital managers.

• Further develop and clarify the definition, strategies and implementation of Distribution Pharmacies across OCB missions to ensure the quality of care and optimisation of resources.

• Deploy the MedOrder Tool in the requested missions to improve medical orders calculations in OCB.

• Continue working in close collaboration with UniField teams to further develop the software, considering the Pharma Requirements compiled by the Pharma WG.

• Update and finalise the Brazilian database.

• Continue collaboration with the Regional Procurement Strategy in Latin America to support medical products procurement and importation policies.

• Provide ongoing regional support to projects in Latin America on matters related to Good Distribution Practices, importation processes, local market assessments and medical stock management.
PHYSIOTHERAPY ACTIVITIES AND RECOVERY OF PATIENTS AFTER SURGERY

KEY FACTS IN 2020

- COVID-19 measures impacted modalities of physiotherapy (PT) services, with a switch from surgical activities to pandemic responses in Lebanon.
- Validation of the Activity Independence Measure-Trauma (AIM-T), a tool to assess functional outcomes after trauma.
- Kickstart drafting indicators for PT activity and Functional Scoring defining impact and means of care.
- Launched a longitudinal study on outcomes after trauma in four MSF projects, Operational Centre Brussels (OCB) (2), Operational Centre Paris (OCP) and Operational Centre Geneva (OCG), with roll-out of standardised tools for PT.
- Mentorship and leadership skills formulation for physiotherapists when opening and closing surgical projects.
- Diversification of care models in PT by addressing different types of patients’ needs (trauma, HIV, Survivors of Torture) throughout the different working group circles.

1. OVERVIEW

Physiotherapy (PT) activities in support of surgical activities saw significant changes to their clinical footprint in patient care and the follow-up pathway. The clinical focus of PT switched from managing orthopaedic patients with early mobility issues towards respiratory care for COVID-19 affected patients. Pivoting in the epidemic context interfered with the normal PT surgical workload.

Preparing phasing out of surgery projects (Burundi, Haiti) and relaunching projects (Afghanistan, Lebanon, Cameroon) presented an opportunity to cross-fertilise the PT experience within MSF, streamlining setup of activities, PT staff recruitment, training and care pathway design as well as connecting the staff with the new technical handbook materials and online trainings.

The ongoing operational research project reported on rolling out services and the impact of PT on recovery of patients after surgery. Determinants of outcomes were collected to provide feedback on quality of care in...
surgical projects. It is part of the further introduction of a pilot functional recovery scale (AIM-T version upgrade) to be used as an outcome indicator.

The challenges that remain and need to be addressed are data collection in the integrated model of care and developing better impact indicators for documenting patient recovery.

2. MAIN PROGRAMME ACTIVITIES

In January 2020, there were seven projects in seven countries (Afghanistan, Burundi, Egypt, Gaza, Lebanon, Democratic Republic of the Congo (DRC), Guinea-Conakry) where physiotherapy support was provided through the collaboration agreement between Humanity and Inclusion (HI) and MSF OCB. Only the Afghanistan, Burundi, and Gaza projects focused on surgical activities. In the meantime, there was a diversification in requests for physical rehabilitation from the usual follow-up of traumatic injured patients admitted in MSF projects. There were new technical domains requiring more tailored approaches for PT such as internal fixation cases, reconstructive surgery, pain management, care for sexual violence victims, COVID-19 care, and HIV care. Detailed guidelines and care models for PT care were discussed and debated in the different technical circles such as Internal Surgical Fixation requirements for MSF settings, Survivors of Torture, Sexual Violence, and Migrant care.

2.1. COVID-19 IMPACT ON PHYSIOTHERAPY SERVICES

The impact of the COVID-19 pandemic on PT services from March 2020 forced OCB to safely adapt outpatient settings where PT is practised while respecting Infection Prevention and Control (IPC), maintaining social distancing and adjusting patient flow. This led to a decrease in the overall use of services, but still allowed priority for the cases most in need. The priorities included post-operative care, patients requiring preventive measures and those who would be left with permanent injury. PT also developed specific protocols of care for COVID-19 patients in intensive care units (ICU), in inpatient departments (IPD), and in outpatient departments (OPD) (Lebanon, Belgium), as well as ensuring a minimum level of care for Survivors of Torture (SoT), migrant care and HIV patients (Egypt, Guinea, DRC).

2.2. DATA COLLECTION ON PHYSIOTHERAPY SERVICES AND CARE INDICATORS

The documentation of PT activities remains patchy and we hope that working groups on medical indicators and outcome measures will produce more standardised data. In 2020, work on the operational research project on trauma and the working group on defining better care indicators developed data frameworks that will monitor use of services, activity rates of staff, types of patients, and quantity/quality of care. They should lead to better documentation of PT activities and help plan for discharge from hospital and follow-up of the patient’s status in the mid-term.

2.3. TRAUMA RESEARCH AND FUNCTIONAL OUTCOMES

The multi-country research project – MSF-HI-KI (Karolinska Institute) – aims at assessing functional outcomes of trauma patients in humanitarian settings and defining socio-demographic, clinical and care-related determinants of these outcomes. It consists of three phases, where the first phase explored validity and reliability of the tool, “Activity Independence Measure for Trauma patients (AIM-T).” Developed by MSF and HI, it included projects in Iraq (OCB, OCP), Burundi (OCB), Yemen (OCP) and Haiti (OCB). The second phase describes changes in the independent activity of trauma patients three and six months after the trauma and identifies socio-demographic, clinical and care-related determinants. A third phase is dedicated to the uptake of the results, conducting activities such as production of a manual, policy brief, guidance note, attendance at a conference, and organising a workshop to ensure operational translation of the research findings. This project was launched following an earlier research study describing the characteristics of trauma patients who received PT care in Kunduz Trauma Centre and the feasibility of providing such care in a resource-limited setting. The specific use of the AIM-T tool was reviewed and adapted to different projects with PT activity and care-related determinants were starting to be collected.
3. OTHER ACTIVITIES

As PT is essential for ensuring a functional recovery and independence for patients, there is a need to develop a more standardised way to implement care in the future. Drafting of the Internal Fixation (INFIX) guidelines included the PT role and requirements for MSF contexts to ensure that minimum standards can be met. The goal would be to avoid having to resort to often time-consuming and resource-intensive, back-up solutions for PT education, care competency and supervisory needs.

The launch of an upgraded handbook in 2020 on Early Rehabilitation in Conflicts and Disasters was a golden opportunity to review and highlight the essential role of PT and rehabilitation needs after trauma. The handbook was translated into several languages and was offered online in practical video sessions that were accessible through a smartphone. This ensured fast uptake and linked professionals to a wide variety of references and practical tips in trauma care.

4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

• The COVID-19 pandemic presented both a challenge and opportunity to employ PT interventions in different contexts beside the usual post-surgical follow-up. Routine PT clinical consultations and interventions needed to be reduced and refocused according the most important needs of functional recovery. Existing PT infrastructure needed to adapt and to address the specific needs of COVID-19 patients. There was also an opportunity to create a new set of PT protocols (ICU recovery, early mobilisation, respiratory therapy) to be tested and added to the PT care pathway. The projects in Lebanon presented a good case study for this need for flexibility. The role of PT was also reviewed through:
  - upgrades to basic skills for ICU care in COVID-19 departments
  - COVID-19 IPC measures integrated into daily PT follow-up care
  - remote coaching of field physiotherapists by headquarters staff avoiding unnecessary and/or disrupted travel
  - learning and disseminating the newly published PT care guidelines for patients affected by COVID-19.

• The pandemic taught the PT department, like all others in OCB, to quickly change its focus and adapt to new situations. The reorientation from post-surgery and trauma care to support for respiratory patients was a huge challenge, but was eventually managed. At the same time, the traditional types of care also had to be adapted to address the patients with the highest priority post-surgical and trauma care needs.

• Remote follow-up mode proved successful and will be retained to provide more flexible ways to support PT care using online courses, webinars, hybrid learning, and regular conference calls in order to maintain a similar level of quality control and capacity building for the future.

4.2. PROSPECTS FOR 2021

• The year 2020 will be remembered as a very volatile one that needed swift adaptation and adjustment to operations. The disruption resulted in gaps in care and new needs to be addressed given the sudden change in priorities that left vulnerable patients, especially those with functional limitations, with delayed service provision and/or additional complications to manage. As the situation gradually improves to a new normal, it is expected that PT input will continue to adapt. For 2021 PT services will:
  - Integrate the lessons learned from PT COVID-19 care.
  - Close projects (e.g. Burundi) and plan how to accompany the phasing out of PT services by supporting local caregivers to continue providing quality care.
  - Foster mentoring in capacity building/quality control of PT care by adoption of common outcome measures within the multidisciplinary team approach.
- Fine tune and standardise PT indicators for traditional post-surgery care, as well as other types including HIV, SoT and Migrant Care.
- Participate in the opening of the Kunduz Trauma Care project in Afghanistan by setting up PT department procedures and introducing the new indicators sheet, outcome measures, and early rehabilitation handbook.
- Implement additional AIM-T score usage and disseminate operational research study outcomes.
- Deploy and use the Internal Surgical Fixation guidance in existing and new trauma programmes.

Anyar is five years old. After being bitten by a snake, his left foot and leg were swollen, posing a risk to his life. The MSF surgical team had to open his limbs to alleviate the pressure on veins and nerves. MSF physiotherapists have been following Anyar. In the beginning, he cried a lot and did not want anyone around, but the MSF physiotherapists created an enjoyable environment for him and now he comes to the sessions excited. His happiness motivates others to join the sessions too. After the session in the photo, Anyar walked without any support for the first time since the incident. © Damaris Giuliana/MSF
SEXUAL & REPRODUCTIVE HEALTH AND SEXUAL VIOLENCE CARE

KEY FACTS IN 2020

• Provision of obstetrics and neonatal care was recognised as essential at the start of the COVID-19 pandemic and all Operational Centre Brussels (OCB)-supported maternities remained open providing delivery care during 2020.

• There was a 45% increase in contraceptive care consultations, and in most projects, a wide variety of methods was being offered.

• Total Sexual Violence (SV) victims treated decreased by almost 20% and a large majority (90%) of the consultations took place in four projects.

• Even though Safe Abortion Care (SAC) provision increased by 55%, fewer projects offered this service compared to last year (18 vs. 23), which is a reduction in terms of access to care.

• HIV testing care services in antenatal care (ANC) increased in OCB projects, although follow up of HIV-exposed babies in MSF programmes required much improvement.

1. OVERVIEW

Despite the multiple challenges due to the COVID-19 pandemic, essential Sexual and Reproductive Health (SRH) services continued throughout the year. All supported maternities remained open to provide obstetric and neonatal care, safe abortion care, contraceptive care and sexual violence services. Prevention of mother-to-child transmission of HIV (PMTCT) integration improved with an increased number of antenatal care (ANC) projects offering HIV testing. Some teams adapted their service provision to different models to keep services accessible by reducing the number of people presenting in healthcare facilities. These models need further investment as potential remains for a continued increase in essential SRH services. With the closure of the Gutu project in Zimbabwe, new initiatives must build further on cervical cancer experiences of the past few years. Investment towards the implementation of comprehensive packages of care integrating SRH and HIV care is required, with a specific focus on vulnerable groups such as adolescents and key populations.
2. MAIN PROGRAMME ACTIVITIES

2.1 ANTENATAL CARE

Antenatal Clinic (ANC) activities remained stable; the total number of projects was 23 (22 in 2019) and total ANC consultations was 136,851 in 2020, compared to 131,694 in 2019. During the last six years, the total number of projects offering ANC care remained stable between 19-23.

MALARIA SCREENING AND TREATMENT

Thirteen of the 23 ANC projects reported Malaria ANC screening data with a wide range of screening coverage (<1-100%). Problematic places, with high positivity rates and low screening coverage, included Gorama Mende (28% coverage, 22% positivity rate), Kenema (42% coverage, 52% positivity) (both in Sierra Leone) and Niono, Mali (17% coverage with 38% positivity).

SYPHILIS SCREENING

In 2020, of the 19 projects which reported syphilis screening data, the majority (n=12) reported high screening coverage (>90%). Only Masisi, Democratic Republic of the Congo (DRC), had a drop in screening coverage over the past three years (from 80% in 2018 to 50% in 2020); in Anzoategui, syphilis screening was only 42%.

2.2 OBSTETRICS

VOLUME OF ACTIVITIES

The need to continue providing obstetric and neonatal care was well recognised in OCB at the start of the COVID-19 pandemic. Despite multiple challenges required to adapt to the new reality, all OCB- supported maternities remained open, providing delivery care during 2020 (with the exception of a planned handover). In some maternities, the workload increased due to closure or re-purposing of other maternity structures in the area. In other facilities, teams observed an initial reduction in the number of deliveries during a few weeks towards the end of Q1 and start of Q2, but went back to usual volumes afterwards. Only in the Khost maternity in Afghanistan did the number of deliveries remain low over a much longer period compared to previous years due to changed admission criteria. Overall, OCB provided delivery care in 19 projects, over 17 Basic Emergency Obstetric and Neonatal Care (BEmONC) and 12 Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) facilities. The total number of deliveries was 71,697 with 7,035 Caesarean sections (CS) for an overall rate of 9.8%. None of these figures represented major differences compared to last year (Figure 1), which meant that most maternities increased again in volume to absorb the 8808 fewer deliveries in Khost.
MATERNAL AND NEONATAL OUTCOME

There was one less maternal death reported in 2020 (n=57) compared to 2019. Trends in maternal mortality remained similar to other years: maternities with a BEmONC package do not (usually) report maternal deaths, which reflects the presence of a functioning referral service. All maternities reported a direct obstetric crude mortality rate within the international target of <1%, an indicator for quality of care.

Stillbirth trends were similar to previous years: CEmONC maternities reported rates between 1.3 and 3.7%. Outside that range, Bamenda Hospital in Cameroon reported <1% and Timergara in Pakistan, 7.3%, remained the hospital with the highest stillbirth rate. BEmONCS reported stillbirth rates of <1% with the exceptions of Jamtoli in Bangladesh (3.9%) and Doro in South Sudan (1.2%).

For the first time, there was data on the total neonatal deaths in maternities (421), representing 0.6% of all live births. Further analysis needs to examine the causes of death.

2.3. POSTNATAL CARE

The total number of projects providing Postnatal Care (PNC) decreased to 14 projects (18 in 2019). The total number of PNC consultations decreased by 20%, from 40,618 in 2019 to 32,200 in 2020. A probable cause is the COVID-19 pandemic, as fearful patients were less likely to come for follow-up.

2.4. ABORTION CARE

2.4.1. SAFE ABORTION CARE (SAC)

VOLUME OF ACTIVITIES

The experience MSF gained over the past years in relation to SAC and contraceptive services has deepened the understanding of its essential and time-sensitive nature. MSF pushed the organisation to call on the global health community during this pandemic to strengthen access for people everywhere (Kumar et al., 2020). Furthermore, there was both a need to expand service delivery and to diversify the models of care.

In 2020, fewer projects provided SAC compared to the year before (18 vs. 23), although the total number of cases increased from 13,466 to 20,849 (+55%).

Of the total requests, 15% were beyond 13 weeks; however, MSF teams provided 97% of abortions in the first trimester. It is important to note that this figure varies depending on the project: some projects consistently provided SAC beyond 13 weeks, whereas others did not.
SAC OUTCOME AND CONTRACEPTIVES
The overall complication rate was reported as 2.2%, with a severe complication rate of 0.09% (literature describes a severe complication rate of <0.1%). For those projects providing contraceptive care, 96% of provided abortions were combined with the start of a contraceptive method. Eleven out of 15 projects reported a contraceptive start rate of >80%; only Lesvos, Greece, had a low start rate at 17%.

LESSONS LEARNED AND WAY FORWARD IN SAC
One project organised a capitalisation and lessons learned webinar and report. Important lessons were: a) Knowledge was key to be able to develop an adapted model, but it also worked as an empowering experience for people on the field; that knowledge was brought via advisers and Mobile Implementation Officers (MIO); b) the Medical Department and Task Force (TF) made the tools and opportunity available to implement a Self-Managed Abortion (SMA) strategy; together, with a motivated team, SAC activities were possible; c) activist-providers took a leading role to find solutions beyond the timeframe of support by MSF.

The novel approach for SAC of task sharing was implemented in one project. Health promoters were trained to support and provide SAC activities, initially, to cope with the large numbers seeking care from the midwife team. However, this approach opened opportunities for community-based or self-managed abortion models with the support of trained people with no professional medical background. Lessons learned will be documented in 2021.

2.4.2. POST-ABORTION CARE (PAC)
The overall total of PAC decreased by 15% (n=6644) compared to last year; however, this decrease was mainly attributed to a large decrease in Khost, Afghanistan.

2.5. CONTRACEPTIVE CARE
There was a continuous increase in contraceptive activities. In 2020 an impressive 211,137 consultations were performed in 34 projects, a 45% increase (145,710 to 211,137) compared to 2019, and a doubling compared to 2018 and 2017. Sixty-eight percent (n=145,199) of all contraceptive care consultations were provided by five projects, each providing more than 9000 consultations a year.

FIGURE 3 Trend of total contraceptive care consultations (2008-2020)
Figure 4 presents the use of contraceptives by method preference.

### 2.6. PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV (PMTCT)

In 2020, HIV testing and counselling (HTC) was integrated into ANCs in 17 projects and in four maternity projects. This represented an increase of provision of HTC in five ANCs compared to last year. A total of 34,076 pregnant women were tested for HIV in ANCs reporting HIV data, leading to the identification of 772 women with newly diagnosed HIV infection (HIV positivity of 2.2%), as opposed to 1% (119/11,585) recorded last year. Conakry performed the vast majority of tests in ANC (n=16,296) and identified the highest number of newly diagnosed HIV positive women (n=230). As in previous years, Grand Bangui maternity performed the largest number of HIV tests. Provision of maternal anti-retroviral treatment (ART) in maternity is illustrated in Figure 5.

HIV-exposed babies were identified and recorded in four projects, one less than last year. Unfortunately, HIV-exposed babies' follow-up in those projects was still very poor. Data on HIV-exposed babies identified and initiated on prophylaxis in 2020 is presented in Figure 5.

### 2.7. CERVICAL CANCER

The OCB project in Gutu, Zimbabwe, screened 2436 women for cervical cancer in 2020 with the Visual Inspection Acetic Acid and Cervicoraphy method (VIAC). This is a decrease of almost 50% compared to 2019. The COVID-19 pandemic was mainly responsible for the decrease of activities, as cervical cancer screening services were suspended. The project offered screening in six of the 29 rural clinics where antiretroviral treatment (ART) was offered. The percentage of HIV positive women who were screened remained stable over the years (30-40% of the total number of women screened). A total of 135 women screened VIAC positive (5.5%), a slightly higher percentage than in 2019 (3.3%). Of women eligible for cryotherapy, 94.5% underwent the procedure. This project was handed over to the Ministry of Health at the end of 2020 and a capitalisation report by the Stockholm
Evaluation Unit is ongoing. The GeneXpert human papillomavirus (HPV) and the HPV vaccination studies will be submitted to conferences and for publication.

For the second year, the Beira project reported data on cervical cancer screening. Six of the 10 primary health care units in the area were screening and treating precancerous lesions. Cervical cancer screening was performed in 1899 women for both key populations and the general population. This number was 37% lower than in 2019, as activities were suspended due to COVID-19. A total of 128 individuals (6.7%) tested positive for cervical precancer or cancer and were subsequently treated with cryotherapy or referred to the central hospital.

2.8. SEXUAL VIOLENCE

Care for victims of Sexual Violence (SV) was offered to 5572 victims in 17 projects (22 in 2019). The overall total of SV victims decreased by 20% (from 6804 in 2019 to 5572 in 2020). As in 2019, most of the consultations (90%, n=4903) took place in four projects: Kananga, Maadi, Rustenburg and Masisi.

SV VICTIMS’ CHARACTERISTICS

Most SV victims presenting for care were women (94%), although the largest proportion of males was in the Maadi, Rustenburg and Kananga project in Greece. The categories included: adults, 20-45 years old, (n=2973, 53%), adolescents, 15-20 years old, (n=1097, 21%), older adults, >45 years old, (n=713, 13%), children/adolescents, 10-15 years, (n=329, 6%) and children <10 years representing less than 5% of victims.

EARLY PRESENTATION

To prevent Sexually Transmitted Infections (STIs), HIV and unwanted pregnancy, it was important that survivors present ≤72-120h after the assault. In five projects, the majority of the victims presented within 72h after the assault (51-81% of all first consultations). However, in most projects, victims presented late for care (>50% presented later than 120 hours). As shown by the recent large study of victims of SV by Anais Broban, projects should adapt their project strategy and activities (dedicated clinic, general clinic, mobile activities, hotlines) so SV victims can access care in a timely manner.

2.9 REPRODUCTIVE TRACT INFECTIONS

STI treatment was offered at different service points (ANC, Family Planning, SV services) and in both outpatient departments (OPD) and inpatient departments (IPD). Capturing all STIs has been complicated for years and remains challenging. STIs are often not the “end” diagnosis in IPD and are most likely underreported. For 2020, 23 projects reported 26,746 patients treated for STIs.

3. OTHER ACTIVITIES

3.1. DEVELOPMENT AND INNOVATIONS

- Development of an intersectional SV Knowledge Base (KB) and Community of Practice (COP).
- Revision of the SV indicators and database
- Input into a first MSF contraceptive guideline, developed by the Task Force for SAC.
- A variety of useful “lessons learned” for key populations including Sexual and reproductive health (SRH) and SV programmes in MSF is available.

3.2. TRAINING

- Distance training was offered to various missions, together with development of distance and blended learning sessions for SRH and Advanced Life Support in Obstetrics (ALSO) courses.
- The SRH Mobile Implementation Officer (MIO) co-facilitated the first intersectional Safe Abortion Care Implementation (SACI) workshop.
- Training of medical doctors in gynaecology continued at the Institute of Tropical Medicine in Antwerp.
3.3. COMMUNICATION AND EXTERNAL PLATFORMS

• Articles, interviews for different magazines and presentations at conferences on the impact of COVID-19 on SRH care provision and maternal health.

• Social media tools and communications regarding MSF experiences focusing on SAC, contraceptive care, key populations.

• Different webpages, magazine articles and videos were produced for International Women’s Day 2020 with cervical cancer as the central team, bringing news from the Gutu project in Zimbabwe.

3.4. OPERATIONAL RESEARCH AND DOCUMENTATION

• The AMoCO (Abortion-related Morbidity and Mortality in fragile and Conflict-affected settings) study ended the data collection phase in Q1 in the Central African Republic (CAR); in DRC, adaptation to COVID-19 resulted in further development of the study plan.

• SRH co-mentored during a SORT-IT course on safe abortion care.

• Two studies in Zimbabwe on adolescent contraceptive care were carried out: a knowledge, attitudes and practice survey regarding contraceptive use and an implementation study of the use of the Annovera ring (long-acting self-managed contraceptive).

• The GeneXpert HPV screening study: the results of phase 1, validation of self-swabbing versus nurse-swabbing and validation of the GeneXpert for HPV screening in Zimbabwe, were presented at the London Scientific Day in 2020. Phase 2 of the study was started in February 2020 and finished in July 2020; writing and submission is planned.

• A feasibility study of HPV vaccination of HIV-positive girls/adolescents between 15-26 years old that was started in mid-2019 finished in 2020.

4. LOOKING BACK AND AHEAD

4.1 LESSONS LEARNED IN 2020

• 2020 was a challenging year due to COVID-19, as field support visits had to be cancelled and distance (virtual) support was quickly developed to support the field teams. In collaboration with the intersectional Reproductive Health (RH) and SV Working Groups, specific guidance papers for COVID-19-adapted SRH care were produced and webinars organised; direct field support was offered to the COVID-19 Belgian projects. At field level, more projects introduced SAC and SV self-care models, while ANC and PNC services were adapted by using hotlines or tele-health support.

• Key Populations (KP) programmes increased their Sexual and Gender-Based Violence (SGBV) responses due to COVID-19 restrictions on sex workers; peer workers received training as first responders and providers of a package of care.

• Adolescent Sexual and Reproductive Health (ASRH) care: Webinars and supporting tools related to adolescent health were created to support the field.

4.2 PROSPECTS FOR 2021

Aims and ambitions

• Contraceptive care and SAC provision need to be expanded, especially in non-maternity/SRH projects.

• Self-managed abortion (SMA) models need to be further developed and implemented, along with local networking and collaboration.

• Develop a systematic response to SAC beyond 13 weeks and improve contraceptive care counselling.
• Provide Emergency Obstetric and Neonatal Care (EmONC) as one of the main strategies to reduce maternal mortality by prioritising this in field visits, COVID-19 willing.

• Capitalisation of experiences for a comprehensive approach towards prevention, screening and management of cervical cancer.

• For STI screening, a study protocol will be developed regarding GeneXpert use in Zimbabwe.

• ASRH care: priority on the digitalisation of ASRH-related training and the organisation of ASRH tools in a digital platform providing practical examples of quality standards and a minimum package of care for adolescents in SRH projects.

• In order to support provision of care for survivors of SV, different activities are planned:
  - Organise an “up-to-date” webinar on new SV tools and platforms.
  - Develop strategies to respond to male, lesbian, gay, bisexual, transgender and intersex (LGBTI) SV.
  - Finalise the SV data management dossier.
  - Collaborate with the OCB ethics platform on the development of SV Value Clarification Attitude Transformation (VCAT) training.
  - Develop a decentralised (community) strategy with multidisciplinary approach: health centres (HC)/mobile clinics, community actors/peer involvement.

A beneficiary of safe abortion care in DRC. 18 years old, she told us that she fell pregnant while in a relationship with a neighbour. She could not tell her family nor keep the child, so she went to the MSF-supported hospital in Kigulube for safe abortion care. © Davide Scalenghe
Surgical Activities

Key Facts in 2020

- Because of the pandemic, two surgical projects performing non-emergency surgical interventions shifted their focus to treating COVID-19 patients.
- Violent trauma was the cause of 17% and accidental trauma was the cause of 25% of primary surgical interventions.
- The proportion of violence-related trauma in 2020 was more than in 2019 (17% vs. 9%).
- There was a 13.4% increase in the number of Caesarean sections in 2020 as compared to 2019, (5410 vs. 4769).²
- Obstetric surgical interventions represented a third of our surgical interventions (33.6%).
- The total number of surgical interventions increased by 1.3% as compared to 2019 (17,929 vs. 17,696).²
- Of all surgical interventions, 5.9% of patients were less than five years old, 9.5% were between five and 15 years and 84.4% were more than 15 years old.

1. Overview

By the end of 2020, MSF offered surgical care in 12 projects in 10 countries: Khost, Bujumbura, Bamenda, Bangassou, Castor, Masisi, Nyabiondo, East Mosul, Bar Elias, Timergara, Gaza, and Mocha. In previous years, the data from two projects, Masisi and Nyabiondo, were separate and this year, the data for the two projects were combined.

Four projects were closed, handed over to local/other partners or had to cease activities as a result of inability to continue because of a natural calamity (e.g. Pibor). They were Kabul, Tabarre, Pibor and Kananga. One project offering surgical care near the frontline was opened in Mocha, Yemen. We continued to offer indirect surgical support to our project in Syria. This report deals with directly supported surgical projects; when Syrian

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1 Number of new cases (primary) and treated patients
2 Excluding Castor, Central African Republic (CAR)
3 Number of admissions to the Operating Room, and number of anaesthetics
4 Violent trauma resulting in a surgical intervention (new cases)
5 Percentage of Caesarean sections using total number of new cases as denominator
6 Number of projects that were active during the year
data is included, it is indicated. Directly supported surgical projects have direct MSF supervision while indirectly supported projects are supervised from a distance (i.e., Syria). The surgical activities in Syria will be included at the end of the report in a separate section on indirectly supported surgical projects.

As a result of the pandemic, two surgical projects switched their strategy from surgery to primarily managing COVID-19 patients – Bar Elias and East Mosul. This led to a decrease in the number of surgical interventions performed in the two hospitals for 2020.

2. MAIN PROGRAMME ACTIVITIES

2.1. SURGICAL PROCEDURES BY PRIMARY INTERVENTION VERSUS REINTERVENTION, AND BY AGE GROUP

Figure 1 shows the indications for surgery based on primary intervention versus repeat intervention, Operational Centre Brussels (OCB), 2020 (directly supported surgery projects only).

During 2020, there were 10,426 new cases, a decrease of approximately 5.3% in comparison to the previous year (11,005 in 2019). Based on the above figures, 57.2% (10,426) of all surgical interventions were a primary intervention while 42.8% were repeats.

Based on Figure 2, projects contributing to the majority of new cases were Timergara, Masisi/Nyabiondo and Mocha. More repeat than primary interventions were performed in Bujumbura, Bamenda, Bangassou, East Mosul and Al-Awda.

The majority of patients undergoing surgery in MSF projects were more than 15 years old (84.4%). Only 6% of cases were less than five years old, while patients between five to 15 years old comprised 9.5%. The majority of the patients more than 15 years old were from Mocha, Masisi/Nyabiondo and Bujumbura. Patients less than five years old were found primarily in Masisi/Nyabiondo, Bujumbura, Bangassou, Bamenda and Mocha.
2.2. SURGICAL PROCEDURES BY INDICATION, TYPE OF SURGICAL INTERVENTION, URGENCY AND DISTRIBUTION PER PROJECT

As shown in Figure 3, obstetric interventions comprised 33.6% of indications for surgical interventions, trauma-accidental comprised 24.6%, trauma-violence comprised 17.7% and non-trauma surgery comprised 24%.

As per Figure 4, projects primarily performing obstetrical emergencies were Timergara and Khost, which are both maternity projects. Masisi/Nyabiondo and Mocha also performed a large number of obstetrical procedures. The important role that projects near the frontline, such as Mocha, play in meeting the needs of the community are demonstrated by their response to obstetric surgical emergencies in addition to their primary role in trauma activities.

Non-trauma surgical pathologies continued to be part of the large number of surgical interventions performed in Bar Elias, Bangassou and Masisi/Nyabiondo. Bar Elias is a project by choice performing only elective surgery.

Figure 5 shows that even though Mocha was a new project, it contributed one quarter of the interventions performed in all surgery projects. It was followed by Timergara, Masisi/Nyabiondo and Bangassou.
There was a 13.4% increase in the number of Caesarean sections in 2020 compared to 2019 (5410 vs. 4769)² (Figure 6). Khost and Masisi/Nyabiondo decreased the number of Caesarean sections in 2020 as compared to 2019, while Timergara and Bamenda increased theirs.

The majority of patients undergoing Caesarean sections were given spinal anaesthesia (92.3%, 3549). General anaesthesia without intubation and intubation constituted 4.4% (169) and 3.6% (126) of all the Caesarean sections.

Based on Figure 7, projects performing Caesarean sections (except Bamenda) gave spinal anaesthesia more than 75% of the time, following international standards. General anaesthesia with intubation was performed in Mocha, Timergara and Khost, instead of general anaesthesia without intubation. Those projects may have had a trained national anaesthetist or nurse anaesthetist who had the capacity to perform general anaesthesia with intubation.

Figure 8 shows that the majority of surgical interventions performed in 2020 were delayed, (7434, 41.5%), followed by urgent cases (6526, 36.4%) and planned cases (3969, 22.1%). In contrast, in 2019, the majority of surgical interventions were urgent (46%).
Timergara, Masisi/Nyabiondo, Mocha and Bujumbura had a high number of urgent cases (Figure 9). Khost, a maternity hospital, also had more urgent cases than delayed cases. East Mosul, Al-Awda and Bar Elias performed more delayed cases or elective cases. This is consistent with their admission criteria and project strategy. Masisi/Nyabiondo, Bangassou and Bamenda had a distribution of urgent, delayed and planned elective surgery that was consistent with the strategy of those projects. Mocha, a hospital near the frontline, performed primarily urgent and delayed cases.

### 2.3. SURGICAL INTERVENTIONS BASED ON THE TYPE OF ANAESTHESIA, INTRA-OPERATIVE MORTALITY AND SURGICAL INFECTION RATES

Based on the type of anaesthesia performed for the year 2020, the most commonly performed anaesthesia was spinal anaesthesia (6415, 38.8%), followed by ketamine (5939, 35.8%) then general anaesthesia with intubation (2091, 12.6%) (Figure 10). Nerve blocks were performed in 5% of all surgical interventions. This represents an important increase in the use of regional nerve blocks for orthopaedic and trauma surgery (from 2% of the total in 2019). It reflects a strategy to teach techniques of ultrasound-guided regional anaesthesia in suitable projects to improve perioperative pain management.

The range of anaesthetic techniques used in different surgical projects reflects differences in the surgical context and the level of training of local anaesthesia providers. Spinal anaesthesia predominated in the obstetric projects in Khost and Timergara because it is preferred for Caesarean sections. The large proportion of procedures performed under general anaesthesia with intubation in Bujumbura and Mocha reflects the fact that many trauma patients require repeated wound debridements and dressing changes under deep sedation. In contrast, the predominant use of general anaesthesia without intubation in Masisi/Nyabiondo and Bangassou reflected the basic level of training of the anaesthetic staff in these projects.

### 2.4. SURGICAL PROJECTS’ INTRA-OPERATIVE MORTALITY AND SURGICAL SITE INFECTION RATE

**INTRA-OPERATIVE MORTALITY, BY PROJECT, 2014-2020**

Only four projects reported intra-operative mortality. They were Khost, Masisi/Nyabiondo, Timergara and Mocha. Other projects may have had intra-operative deaths but did not report them. Intra-operative deaths are defined as any death occurring between the induction of anaesthesia and discharge from the recovery room. While mortality rates are reported per project, data cannot be crudely compared across programmes since intra-operative mortality is associated with patient condition, emergency status, indication for surgery, context, and project objectives as well as quality of care. Data can, however, be compared within projects over time to assess changes in their performance.
Table 1 shows intra-operative mortality for 2020 and previous years, for comparison within specific projects.

**TABLE 1 Intra-operative mortality of surgical projects for 2020**

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<th>Year</th>
<th>Project</th>
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Recording of intra-operative deaths remained inconsistent for each project (only four projects reporting intra-operative deaths) although the relative deaths per project in comparison with the previous year were stable.

**SURGICAL SITE INFECTIONS**

**FIGURE 11 Comparison of surgical site infections among projects reporting infection rates, OCB 2020**

Out of the 12 projects, only six projects reported their surgical site infection rates (Figure 11). Khost noted an increase in surgical site infections, but the increase may have been secondary to improved reporting. Bujumbura, Masisi/Nyabiondo, Timergara and Gaza reported a decrease in surgical site infections. The most marked decrease was in the projects of Bujumbura, Gaza and Masisi/Nyabiondo but this change could also be due to a change in the way surgical site infection was being reported.
2.5 SYRIA SUPPORTED PROJECTS

Syria is an indirectly supported project. For 2020, our project in Syria performed a total of 7695 surgical interventions of which 95% (7370) were primary interventions, 57.2% were planned, 41.2% were urgent and 1.7% were delayed. The majority of patients undergoing surgery in Syria were more than 15 years old (6113, 81.9%). The distribution of the indication for surgical intervention in the Syria project is relatively stable, comparing 2019 and 2020. The leading cause of the surgical intervention was non-trauma surgical pathology, followed by obstetrical cause, trauma-accident and then trauma-violence. Twenty-one percent of all primary interventions was a Caesarean section (1566/7370). Almost all the Caesarean sections (95.8%) were performed under spinal anesthesia, while only 3.3% were performed under general anesthesia with intubation. Based on the types of surgery, orthopaedic procedures comprised one fourth of the interventions, while obstetrics and specialised surgery comprised one fifth each.

2.6 COMPARISON OF MAIN INDICATORS THROUGH THE YEARS

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Table 2 shows a comparison of the main indicators from the time that surgical activities were recorded in MSF. Even though the number of surgical projects has decreased, the number of surgical interventions has gradually increased, even during the pandemic, especially in the number of Caesarean sections and surgery for trauma.

2.7 ORTHOPAEDIC PROCEDURES AND PROJECTS

By the end of 2020, orthopaedic surgery was offered by eight projects in eight countries (Table 3): Mosul (Iraq), Gaza (Palestine Occupied Territories), Arche-Bujumbura (Burundi), Mocha (Yemen), Bamenda (Cameroon North), Bangassou (Central African Republic (CAR)), Kivu-Masisi (Democratic Republic of the Congo (DRC)) and P17. Four projects – Cameroon, DRC, CAR and Yemen – performed general basic orthopaedic surgery, limited to external fixation as part of general surgery, following which patients could be referred to other facilities for final treatment if needed.

After handing over the Tabarre project to Operational Centre Paris (OCP), OCB had three projects remaining where orthopaedic surgery care was the main activity. Two of the three projects were doing advanced, planned orthopaedic surgery including reconstructive surgery (Mosul-Iraq and Gaza-Palestine) and one (Bujumbura-Burundi) was doing general orthopaedic traumatology limited to external fixation, in high numbers, as end point treatment.

7 Excluding data from Castor
In 2020, although the total number of procedures decreased in the three trauma hospitals, minor wounds management remained a predominant activity, except for Gaza which performed more plastic surgery (29%) and other specialised orthopaedic procedures (13%) related to reconstructive surgery such as osteotomies, bone lengthening, Masquelet and joint operations. Arche Clinic / Bujumbura was limited to reduction (26% in 2019 and 14% in 2020) and external fixation (5% in 2019 and 7% in 2020), whereas minor wounds treatment accounted for 64% and 72% in 2019 and 2020 respectively.

Internal fixation represented 6% and 5% of activities for Gaza and Mosul, including exclusive pin fixation for Gaza and partial plating and nailing for Mosul. Both projects had their orthopaedic departments’ redesign completed in 2020, permitting internal fixation and reconstructive surgery. Internal fixation was planned for CPOC/Al Awahda Mosul Hospital in August 2020 but could not start before December 2020 due to COVID-19 reorientation.
Culture and antibiotic sensitivity over bone and deep tissue biopsies are well established as the gold standard investigations in the treatment for osteomyelitis. These biopsies accounted for 36 (4%) and 70 (17%) of the interventions in the Gaza and Mosul projects. Thanks to the biopsies sent for culture and antibiotic sensitivity testing in Mosul, *Staphylococcus aureus* was not only confirmed as the main bacterium found in 282/713 isolates (39.6%) from March 2018 until December 2020, but also was the most multi-drug resistant in 93.6% of cases. The decision was, therefore, made to amend the strategy of antibioprophylaxis replacing Cefazolin with Vancomycin.

### 3. OTHER ACTIVITIES

Despite the pandemic, field visits were undertaken in several countries – Central African Republic, Lebanon – and even gap filling was managed. Closure of airports in different parts of the world and lack of flights led to cancellation of missions with specialists going to the field, leading to a gap in specialists. Many expatriate anaesthetist positions were not filled because they were required to provide critical care for the COVID-19 response in their own countries.

Gaps were seen at all levels, including positions in coordination, leading to lack of knowledge of the project or lack of continuity in following up certain data (e.g. infection rates). Projects were also overwhelmed by preparations for managing and treating COVID-19 patients.

As a result of the pandemic, meetings between the different working groups – the Surgical Working Group and the Critical Care Working Group – were held online. The MSF Surgical Workshop still continued online with strong participation of different national staff from our surgical projects. The second inter-university course of the Masters in Humanitarian Surgery with the Catholic University, Louvain (UCL) continued, but was interrupted by the pandemic. Continuation of the course is planned for 2022.

Several intersectional guidelines and protocols were approved, including the Intersectional Trauma Policy paper, and several research papers were published in peer reviewed scientific journals.

Several meetings were held intersectionally to support the start of the surgical teaching hospital (ISTP) and the start of the “initial batch” of candidates is foreseen for mid-June 2021 in South Africa, with the first formal batch to start in September 2021.

### 4. LOOKING BACK AND AHEAD

#### 4.1. LESSONS LEARNED IN 2020

- Because of the closure of borders and airports and the cancellation of flights worldwide, the importance of the role of national staff in the surgical care and performance of the surgical interventions in our surgical projects was highlighted.

- There is a need to increase the level of the knowledge and competencies of the national staff in our hospitals performing surgical activities/interventions. We cannot always rely on the presence of international specialists. We need to ask our local partners to increase available national staff who can be trained to perform surgical duties.

- We need to provide clinical supervision and continued training in the field for the national nurse anaesthetists who have recently graduated from MSF Academy-sponsored training programmes in Ghana and Ivory Coast.

- Although some tools exist for teaching and training our national staff from a distance, more tools will be needed to allow our national staff to learn online – through videos, e-books and online courses.

- Provision of quality surgical care continues to be the goal for all the projects. Surgical infection rates are one measure of surgical quality. However, only half of the projects were able to report on their surgical infection rates. There were several reasons for this, including gaps in positions, increased projects concentrating on COVID-19, and not because the projects were not willing to follow up on these rates.
• Increasing use of technology-facilitated briefings, de-briefings online and many tools have been developed to allow these meetings to be efficient and easy to use. Having a good internet connection became an essential part of work during the pandemic.

• It is possible to look good from the waist up during all webinars and meetings.

### 4.2. PROSPECTS FOR 2021

• Continue to develop curriculums for teaching in each specialty, adapted to the context and necessary skills required for each project.

• Develop more tools that are efficient and easy to use for both national and international staff – online tools, videos, platforms for discussion with peers, etc.

• Learn how to teach and train from a distance in our roles as technical referents.

• Identify national staff who can be given greater roles and responsibilities within MSF and nurture them in these roles; roles can be as supervisors or future surgeons.

• Encourage projects to find ways to allow national staff to access teaching courses online.

• Continue to provide training to specialists to prepare them for their actual role in the field through the Dusseldorf Practical Surgery Training and the Masters in Humanitarian Surgery in Austere Environments. Adapt these trainings to the present pandemic.

• In austere environments where national health referral systems have broken down, MSF orthopaedic programmes should not be limited to conservative treatments and external fixation without considering reconstructive surgery. The continuum of care dictates the alignment of MSF projects along with national health referral systems for ensuring sustainability.

• Improve the quality of surgical care by continuous monitoring and feedback of surgical site infections using the post-operative site infection database.

• Continue to publish operational research studies in order to professionalise the work of MSF and to improve surgical programmes within MSF.

• Strengthen the response for multiple disasters through good coordination between all actors, including emergency medicine doctors, anaesthetists, orthopaedic surgeons, other surgeons, nurses and logisticians. Strengthen our trauma surgery response by focusing on a systems-based approach.

• Continue to foster good collaboration within OCB and other sections, as well as with other external platforms.

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MSF surgeons providing care to a man who was attacked on the road by armed men who tortured him and shot him five times. He survived his wounds and was treated in Bamenda, North-West Cameroon. © Albert Masias/MSF
SURVIVORS OF TORTURE

7846
A total of 7846 new and follow up individual sessions were conducted in 2020

KEY FACTS IN 2020

• Change of terminology from “victim” to “survivor” of violence, including torture.
• Four specialised projects work with survivors of torture (SoT) in three countries.
• Many other Operational Centre Brussels (OCB) projects see survivors of violence, including torture, in their patient populations.
• Second external evaluation of the OCB SoT projects (final version to be published in 2021).
• From May 2020, one SoT referent in OCB (a part-time dual role divided into a referent for SoT and for Mental Health (MH)) to provide technical support to the field.

1. OVERVIEW

Torture and ill-treatment are widespread phenomena in many countries where MSF works, often in conflict contexts. MSF sees a high number of survivors of violence, including torture, amongst its beneficiaries in various operational contexts, not just within the specialised projects for survivors of torture (SoT).

In 2020, UN anti-torture experts warned that the COVID-19 pandemic was leading to an escalation of torture and ill-treatment worldwide and that torture survivors were at increased risk of acquiring the virus, especially those detained in prisons or immigration centres.

MSF OCB specialised SoT projects help survivors recover from the physical, mental and social consequences of torture and ill-treatment. Within these programmes, MSF advocates for improved access to healthcare services and protection.

The OCB Medical and Operational Strategies (2020-2023) prioritise direct care for victims of violence, as well as investing in new models of care, including task shifting and community-based care. They highlight the need for patient-centred care and the inclusion of communities. These priorities are reflected in the strategic shifts in SoT projects in 2020, accompanied by a drive to replace the term “victim” with “survivor.”

2. MAIN PROGRAMME ACTIVITIES

At the end of 2020, there were four specialised survivor of torture/violence projects. However, many other OCB projects had survivors of violence, including torture, amongst their patient populations. The SoT referent has been increasingly involved in providing technical guidance and support to non-specialised projects while enabling links and partnerships to be created both within MSF and external to MSF for projects working with survivors of violence, including torture.
The four OCB specialised SoT projects offer a recovery approach, helping survivors rebuild their lives through a combination of multi-disciplinary services. They include support for physical health (physicians, nurses, physiotherapists), mental health (psychologists, psychiatrists, counsellors), social needs (social workers, health promoters and cultural mediators) and legal needs. These domains overlap and work collaboratively to provide best care.

The year 2020 also furthered the emphasis on a stepped-care approach to care for SoT. COVID-19 postponed some planned community-based group interventions; however, some of this work has now resumed. It is frequently a challenge to provide services for asylum seekers, undocumented migrants and SoT in the contexts where we work. MSF SoT projects continue to liaise with their referral partners to connect patients to essential services that MSF does not provide. MSF works with state institutions, civil society groups, medical providers and academic institutions to identify improvements in pathways to care and create a network of services for survivors of violence, including torture.

The four projects are developing their survivor-centred approaches, including empowering survivors to make decisions about their own recovery interventions. It is acknowledged that initiatives at the household, peer and community levels are needed to foster supportive environments for SoT and this is an increasingly important component of the project strategies.

In 2020, there was further emphasis on providing evidence-based treatment as well as exploring, integrating and adapting to new knowledge, tools and innovative care. There was reflection on frameworks for outcome measures and increased use of outcome indicators to improve quality of care.

Due to COVID-19, all projects had to adapt their activities and there were many medical and operational challenges as airports closed, supply chains were interrupted, human resource gaps were amplified and curfews imposed. Teams working with survivors of torture and violence developed innovative alternatives to on-site consultations by developing their skills in remote working and tele-counselling. This approach was particularly successful in the areas of mental health, health promotion and social support to ensure the continuation of our services, less so when addressing physical health needs. Overall, it was an opportunity for MSF to expand its experience with teleworking to provide greater access to survivors who are unable to reach MSF clinics.

A further example of an essential, yet relatively innovative way of working within MSF, was the “survivor group” in one of the SoT projects. This was a group of survivor experts based on the model introduced by Freedom from Torture, UK. The broad objectives were to hear survivors’ voices both for internal advocacy within MSF projects, as well as external advocacy, allowing survivors to speak out. Lessons learned from this approach could enable other projects to be more survivor or patient-centred.

3. OTHER ACTIVITIES

Evaluation and learning was prioritised in the SoT projects. The draft of the second Stockholm Evaluation Unit report on SoT projects was delivered and much debated. The final “Evaluation of MSF Treatment and Rehabilitation of Victims of Torture Programmes in Four locations” will be published in January 2021. Key recommendations were: adopt a layered response, endorse flexibility in care practices and approaches, prioritise documentation and develop indicators.

The new MSF SoT referent started in May 2020. Given the dual nature of this referent position (SoT and Mental Health), much of their work has been detailed in the Mental Health section of this report. The SoT referent leads the Survivors of Torture Circle and is an active member of the Migration Health Circle as well as the Mental Health Intersectional Working Group.

The COVID-19 travel restrictions made field visits a challenge in 2020, so in addition to the field visits, online presence and support and the development of e-trainings was essential.

There were no other SoT referents in other operational centres (OCs). However, the collaboration with MSF Spain/Operational Centre Barcelona was continued, with work on improving the Victims of Ill-treatment and Torture Inter-Sectional Knowledge VOIT Hub (which will be renamed SOIT Hub in 2021).
The OCB SoT Circle collated a library of SoT resources and these materials will be accessible on the revised SOIT Hub in 2021. The SoT referent and the other referents in the SoT Circle worked with field teams to improve knowledge on care for SoT and ensure implementation of guidelines and protocols. For example, the legal and SoT referents worked with teams in 2020 on documentation of torture and medical legal certificates; this work will continue in 2021.

The year 2020 saw the introduction of peer groups across OCB specialised SoT projects and these will be continued in 2021. For example, peer groups on the management of chronic pain were facilitated by referents across disciplines (anaesthesia, physiotherapy, mental health and SoT) and aided by external experts.

Given field teams’ expressed needs, both in specialised SoT and non-specialised projects, late 2020 saw the start of the development of the first-ever online SoT training. This will be piloted in April 2021.

MSF recognises the expertise of other external organisations working with SoT. Due to COVID-19, some of the existing collaborations between MSF projects and external experts were put on hold. However, late in 2020, new partnerships and collaborations began with the Danish Institute Against Torture and the Centre for the Study of Violence and Reconciliation, South Africa, with plans to continue working together in 2021.

4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

- Staff were resourceful and able to find innovative ways of working when faced with the new challenge of a global pandemic; these new skills can be used in the future to enhance access to care for survivors.

- A survivor-centred, multi-disciplinary, and context-relevant approach (including stepped-care) are keys to working with SoT and should be further developed.

- Evidence-based interventions are needed to provide good quality care. Innovative approaches should be attempted where they are assessed to be safe and feasible.

- Indicators need to include outcomes and impact measures.

- Staff professional development is essential. Clinical supervision is mandatory and should be developed to improve quality of care. Peer groups can enhance shared knowledge and learning. Staff need access to quality e-trainings.

- Further collaboration across the OCs and with external partners is needed to share knowledge and improve the quality of care.

4.2. PROSPECTS FOR 2021

- The focus will be on support for non-specialised projects working with survivors of violence, including torture, in addition to continued support for the specialised projects.

- Staff professional development will be improved with the implementation of the first-ever pilot e-training for staff working with SoT. This will be complemented by the continuation of OCB peer groups and examining the feasibility of communities of practice on the SOIT Hub.

- An iterative process that started in 2020 will be finalised in 2021 with the first Briefing Paper on MSF care for SoT and ill-treatment. The SoT referent and SoT Circle will continue to support improvement of the field’s knowledge on care for SoT and implementation of MSF guidelines and standards.

- Ensuring projects deliver timely and evidence-based interventions will be a focus based on a stepped-care approach. There will be training for SoT projects in early 2021 on Problem Management Plus, an evidence-based counselling intervention which supports the OCB strategic goal of task-shifting. The SoT and MH referents will support the implementation and assessment of this approach.
• Work on monitoring the data and improvements to the database is ongoing. Outcome indicators were recommended in 2020 and this work will be continued in 2021 in order to improve the quality of the SoT services provided by MSF.

• Innovative ways of working in SoT projects will be continued in 2021, to be capitalised on and share lessons with non-specialised projects. This not only includes the technological advances and remote working skills necessitated by COVID-19, but also other important advances, including survivors’ voices being heard more through survivor groups and other mechanisms. Where appropriate, the evidence-based and innovative approaches will be supported by research, to allow better analysis and improve the care provided.

• There will be further collaboration across OCs to ensure the best care for SoT, and the continued promotion of external partnerships with local community actors working with survivors of violence, including torture, as well as external SoT experts. This is not only necessary to provide high quality and sustainable services, but also to share good knowledge and practice.

Abdul Rahman* was studying Law in Syria before the start of the war. He fled his home after being detained and tortured first by the regime, and later by the Islamic State group. (*Name has been changed). © Albert Masias/MSF
TUBERCULOSIS

**KEY FACTS IN 2020**

- Access to tuberculosis (TB) care was heavily affected by the COVID-19 pandemic in 2020, resulting in a major reduction of access to diagnosis and treatment for patients with TB globally. MSF projects made huge efforts to mitigate this impact by adapting provision of TB care to COVID-19 affected settings.

- TB remained the biggest killer among People Living with HIV and efforts to ensure early detection and treatment in HIV projects continued.

- New diagnostic and preventive strategies were piloted in several contexts, including use of new tests for TB/Drug-Resistant TB (DRTB) diagnosis, such as FujiLAM and Genome sequencing, as well as new and/or shorter TB preventive therapy options for vulnerable populations.

- DRTB care remained a focus of MSF Operational Centre Brussels (OCB) work in 2020, with growing attention given to children in India and South Africa, and to new all-oral regimens across several countries, including Ukraine and Iraq.

- While the TB project in Malawi prisons concluded, new activities for incarcerated people are planned in Brazil.

1. **OVERVIEW**

The year 2020 witnessed a catastrophic setback in the fight against TB due to the COVID-19 pandemic, which led to a huge reduction in access to TB care, particularly for diagnosis and treatment of TB patients. With its 10 million cases and 1.4 million deaths, TB was second only to COVID-19 as the main infectious disease killer globally, especially among the most vulnerable populations, such as children and people living with HIV (PLHIV). Progress toward TB elimination was already too slow prior to COVID-19, and this new threat had a very detrimental impact on access to TB care, all around the world.

Major efforts were made across MSF OCB projects in 2020 to mitigate this impact, adapting the models of care to ensure continuity of diagnosis, treatment, prevention and patient and community support, especially in contexts heavily affected by both epidemics such as India, the Southern and Central African Region, as well as Iraq and Ukraine. While finding new solutions for Infection Prevention and Control (IPC), providing remote support to patients, and integrating TB/DRTB and COVID-19 activities, the teams also managed to continue...
piloting innovative interventions and keep advocacy for improved TB/DRTB care high in the MSF agenda. A particular focus was given to paediatric DRTB, and to new TB diagnostic and preventive options.

2. MAIN PROGRAMME ACTIVITIES

2.1. TB CASE DETECTION AND CASE FINDING STRATEGIES

TB/DRTB vertical or integrated activities were run in India, Iraq, Malawi, Mozambique, South Africa, Ukraine, Zimbabwe, Democratic Republic of the Congo (DRC), Guinea, and Nigeria.

For 2020, TB case detection data were reported from 10 OCB projects. A total of 4083 TB patients were started on treatment during the year (Figure 1); out of these, 2721 were drug-sensitive and 1362 were drug-resistant. This represented a 30% drop of drug-sensitive TB (DSTB) cases detected compared to 2019, due to several reasons. There were fewer projects reporting data, as in Conakry (Guinea), Masisi (DRC) and Chhattisgarh (India), this last project was due to close in 2020; the progressive closure of projects in Malawi (Nsanje and Chichiri prison) that were providing access to TB care to more than 1000 patients every year; and the impact of COVID-19 lockdown measures that reduced access to care. In sub-Saharan Africa, the biggest cohorts were observed in Beira (Mozambique), Kinshasa (DRC), and Eshowe (South Africa) mostly represented by patients with advanced HIV disease (AHD), often arriving to care in extremely poor condition. In these contexts, the focus was to ensure continuity of strategies for early TB diagnosis, treatment and prevention, and particular efforts were made to integrate screening and diagnosis of COVID-19 and TB, both of which can present with similar signs and symptoms. The projects also kept pushing for implementation of the Advanced HIV package of care. In 2020, the Eshowe project started implementation, under operational research (OR) conditions, of a new point of care (POC) test, FujiLAM, for diagnosis of TB in HIV. Outcomes are expected soon.

Important results were achieved in access to TB diagnosis and treatment among malnourished children in Maiduguri, Nigeria, where 77 children under five years, with severe or moderate malnutrition, were started on TB treatment.

DRTB case detection remained stable, thanks to the efforts of the teams in India, South Africa, Ukraine and Iraq, which managed to keep case-finding activities ongoing despite the pandemic hitting hard in all these countries. The biggest cohort remained in Mumbai, where MSF provided TB/DRTB care to a very vulnerable population, the vast majority of whom live in slums. Here, for the first time in MSF activities across all sections, access to whole genome sequencing (WGS) for diagnosis of resistance to DRTB drugs was piloted under operational research conditions.

In India and South Africa, the ongoing focus was given to diagnosis, treatment and advocacy for paediatric DRTB care. The plans included access to all oral regimens for DRTB, new paediatric formulations of DRTB drugs, as well as strategies to overcome the challenges in diagnosis of DRTB in children and in decentralised care (see section 2.3).
2.2. DSTB OUTCOMES

For a total of 2017 patients started on treatment in 2019, DSTB treatment outcomes were reported by only four projects. The average success rate was 52% (Figure 2), and mortality rate, 21%, with relevant variability among the different projects. These results were, in fact, skewed by outcomes from Kinshasa, the main project reporting DSTB outcomes, where the cohort was represented mainly by hospitalised People Living with HIV (PLHIV). They often arrived very late in their disease for care with advanced HIV, and often died within the first days of hospitalisation. In this project, mortality was 43% despite huge efforts by the project teams to provide effective and timely holistic care for the sickest patients. Unfortunately, coverage of HIV and TB care, outside of and sometimes within MSF projects, remained poor in Western and Central African countries like the Central African Republic (CAR), South Sudan and conflict areas in DRC (Masisi), leading to patients being diagnosed and referred to MSF care very late and in extremely poor condition. Unfortunately, there were challenges in data collection in these settings that required more effort to find solutions while providing better integration of care. Beside implementing optimised diagnostic and treatment approaches at facility level, MSF teams continued to push for increased coverage of care at community and decentralised level. This happened in Eshowe, where early detection and treatment of TB meant reduced morbidity and mortality, as shown by a mortality rate of only 8% in a population heavily affected by HIV. There was more good news from Maduiguri in Nigeria, where the success rate among malnourished children with TB reached 70%.

FIGURE 2 DSTB outcomes for the 2019 cohort

2.3. DRTB ENROLMENTS, OUTCOMES AND NEW REGIMENS

Innovation and high standards of care in diagnosis, treatment and patient-support strategies for populations affected by DRTB remained at the core of MSF OCB work in TB.

The major projects with a vertical focus on DRTB were Mumbai (India), Khayelitsha and KwaZulu-Natal (South Africa), Zhytomyr (Ukraine) and Baghdad (Iraq), while Kinshasa (DRC) and Beira (Mozambique) were integrating DRTB care as part of the HIV activities. A total of 1362 patients were enrolled in treatment in collaboration with the Ministries of Health (MoH).

Not without difficulties, all projects with a DRTB component maintained and adapted their activities to mitigate the impact of COVID-19 lockdowns. Infection control measures were strengthened, integration of DRTB and COVID-19 screening implemented, and in some contexts shielding as well as digitally supported adherence, counselling and monitoring of adverse events were implemented.

Enrolments for 2020 are shown in Figure 3 and treatment outcomes of the 2018 cohorts are shown in Figure 4 (DRTB outcomes reported two years after treatment initiation).
Key activities in 2020 included: the pilot use of next generation genome sequencing (NGS) for DRTB diagnosis, expected to become the future gold standard; an ongoing push for oral regimens and use of new drugs across all projects; Ukraine ran an operational research study on oral shorter regimens for Multi-Drug Resistance and Fluoroquinolone (FQ)-resistant patients; the team in Iraq supported the Ministry of Health (MoH) in use of new drugs and oral regimens and successfully supported the policy change in national guidelines; South Africa and India made a special focus on the paediatric population, strongly advocating for use of oral regimens and access to paediatric formulations as well as for improved diagnostic approaches and decentralised care. The project in Baghdad also started children and adolescents on new oral regimens, which is huge progress compared to previous years.

Despite these efforts, overall outcomes remained relatively poor (Figure 4), with success rates between 50% and 64% across different projects. Unfortunately, rates of lost to follow-up (LTFU) remained high across all contexts, as did mortality, especially among PLHIV. These results showed how the fight against DRTB is far from over, and the use of better regimens and new drugs is not enough to overcome all of the challenges in what remains a very long and difficult journey for patients with DRTB.
This is why MSF OCB remains committed to operational research and participation in multi-centric clinical trials, such as endTB and endTB-Q in South Africa and India, aiming to find shorter oral regimens for patients with DRTB, including for the most complex forms: MDR resistant to Fluoroquinolones. At the time of writing this report, the endTB trial had enrolled more than 650 patients across seven countries, while endTB-Q, almost 50 patients.

3. INNOVATION IN TB PREVENTIVE THERAPY (TPT) FOR DS AND DRTB

Innovation and scale-up of TB Preventive Treatment (TPT) options was a growing area of MSF OCB work. For the first time, in 2020, MSF introduced TPT for children and adolescents, who were contacts of DRTB cases. This innovative and effective approach was piloted in Khayelitsha, where, after comprehensive TB screening to rule out active TB/DRTB, 65 close contacts of DRTB cases, under 18yrs of age, received TPT with six months of Levofloxacin or in a few cases, Delamanid.

Concerning TPT for contacts of Drug-Sensitive TB (DSTB) cases and for PLHIV, the experience in Malawi prison was finalised and showed very good outcomes of completion rates among inmates who had received 3H. It is a combination treatment of Isoniazid and Rifapentine administered once a week for three months as a new TPT strategy for Latent TB Infection. There was good uptake of TPT among HIV-positive inmates who received the fixed-dose combination (FDC) of isoniazid-cotrimoxazole and vitamin B6 (INH-CTX-B6). These two interventions represented an important milestone, as they were among the first experiences of TPT with 3HP and for DRTB contacts in limited resource settings and outside of trial conditions. The FDC INH-CTX-B6 was also used in Conakry and Kinshasa in PLHIV.

4. LOOKING BACK AND AHEAD

4.1. LESSONS LEARNED IN 2020

• In 2020, MSF teams once again showed their capacity to react quickly to an emergency situation, the COVID-19 pandemic, adapting strategies to ensure the best provision of care even for patients with the chronic conditions of TB and DRTB. Despite all challenges, access to TB/DRTB diagnosis and treatment continued in MSF projects, and there was a bold strike for new, innovative care. However, the results achieved were not enough, and many areas remained poorly covered or in need of more investment. Examples included: integration of TB/DRTB into non-vertical programs, especially in Western and Central Africa (WCA), South Sudan and the Middle East North Africa (MENA) region, as well as more investment in DSTB in children and in prevention across all settings.

• The fight to reduce TB-related mortality in PLHIV remained a major one, unfortunately, not yet won. Similarly, integration of TB care across all contexts, and especially in WCA and South Sudan remained poor.

• The successful experience in Malawi prisons showed that a comprehensive model, which included screening, diagnosis, treatment and prevention for TB infection and disease, could be implemented even in a complex context and population, such as incarcerated people.

• Implementation of new oral regimens for DRTB and new strategies to prevent DRTB, especially among the most vulnerable populations, are possible and must remain a focus of MSF work, as the activities in South Africa, India, Iraq and Ukraine showed in 2020.

4.2. PROSPECTS FOR 2021

• At the time of writing this report, the COVID-19 pandemic keeps spreading around the world, with a continued devastating impact on access to care for TB patients. Without a strong and ongoing investment in models to mitigate its impact, TB mortality and transmission will continue to dramatically increase globally and patients with TB/DRTB will pay the consequences. We hope that COVID-19 will
lead us to “build back better” with a renewed focus on the prevention, diagnosis, and treatment of airborne infection – both TB and COVID-19.

- Protecting new and existing TB/DRTB patients from interruption of care, while piloting new interventions advocating for the most vulnerable ones, such as children, PLHIV and key populations such as prisoners, will likely remain the priority through 2021. It is also time to push for even more access to TB prevention, including the provision of new and shorter TPT options.

- Priorities will include:
  - Continue to mitigate the impact of COVID-19.
  - Integrate TB/DRTB care in Western and Central Africa and South Sudan: this is not a new priority, but much more can be done to ensure that adults and children, irrespective of HIV status, get access to diagnosis and treatment in these countries where we work.
  - Scale up new preventive therapies (TPT) to reduce the risk of developing active disease among exposed contacts; pilot new models to show feasibility, with a strong advocacy role to reduce cost and promote access.
  - Pilot new DS/DRTB diagnostic tools and treatment strategies, such as: in diagnosis - Xpert on stool for children, Xpert XDR cartridges, digital Chest X-ray strategies, FujiLAM; in treatment - shorter regimens for DSTB and oral, shorter regimens for DRTB routinely or under OR, including the endTB Q trial in India.
  - Pay attention to the most vulnerable populations: migrants, mobile/displaced conflict populations, inmates (with a new project in Rio de Janeiro expected to start in June 2021), patients with comorbidities such as diabetes and PLHIV.
  - Other ambitions include the reflection on integration of TB/DRTB and Antibiotic Resistance (ABR) which should hardly be separated one from the other, especially in contexts like India and the MENA region. They are contexts where antibiotic stewardship is poor, particularly in the huge private sector, with uncontrolled access to “over-the-counter” antibiotics leading to the development of resistance among drugs used for TB/DRTB as for other infections.
VACCINATION

546,189 doses of vaccines were given for routine vaccination (similar to 544,933 doses in 2019)

331,163 measles doses given in reactive vaccination campaigns

11% of <5y routine doses given to children above one year of age

30% reduction of doses used for Post-Exposure Prophylaxis (PEP)

311,163 measles doses given in reactive vaccination campaigns

No preventive campaigns were conducted

Very few doses (53 compared to 175 in 2019) used for vaccination of patients with medical conditions

KEY FACTS IN 2020

• Eight measles reactive campaigns (one in Mali, four in the Democratic Republic of the Congo (DRC) and three in the Central African Republic (CAR)) were conducted during the COVID-19 pandemic (vaccination was not part of the measles response in two situations in DRC and Guinea).

• Routine vaccination activities were secured in several settings (Bangladesh, Guinea, India, DRC, Greece, Lebanon, Syria, Venezuela), despite the overall attention given to COVID-19.

• Several guidance documents for conducting vaccination in the COVID-19 context were developed and broadly shared.

• Factsheets about COVID-19 vaccine candidates were developed.

• A series of webinars about COVID-19 vaccination were held with different audiences.

• The vaccination chapter of several guidelines has been revised (Diphtheria chapter of clinical MSF guidelines for HIV, Nutrition, Neonatal).

1. OVERVIEW

Over the course of the year 2020, 908,587 doses of vaccines were provided to beneficiaries with the support of MSF Operational Centre Brussels (OCB). As per previous years, it was very difficult to make comparisons between projects as the recording criteria were not homogeneous; some projects only encoded doses provided by MSF staff and from MSF stock while others reported all doses provided in the supported facilities, including those coming from the Ministry of Health (MoH). The overall trend seemed stable thanks to increased volume in some projects (Kouroussa) when others were put on hold (Bangassou).

Similar to 2019, the majority (60%) of vaccine doses were given through routine vaccination activities, while 37% (compared to 23% in 2019) were given in response to measles outbreaks. No preventive vaccination campaigns were conducted in 2020, which is to be expected since preventive activities are more likely to be sacrificed during a medical emergency like the COVID-19 pandemic. Three percent of doses were used in post-exposure prophylaxis (PEP) as compared to 5% in 2019.
2. MAIN PROGRAMME ACTIVITIES

2.1. ROUTINE VACCINATION

A total of 546,189 routine vaccinations were administered in OCB projects over the course of 2020 (Figure 1). The majority were given in Outpatient or Inpatient Departments (OPD/IPD) (n=474,592), while a small proportion were administered in Antenatal Care/Gynaecology Departments (ANC/GYN) (n=71,597). We believe that children vaccinated in the Nutrition services were recorded under OPD.

Eighty-four percent of the doses routinely administered were given to children <5y (460,996 doses); among them, 51,706 (11%) were given to children older than one year compared to 14% in 2019. Similarly to 2019, only 2.5% of the doses given routinely (13,596 doses) were given to children older than five years of age.

Catch-up vaccination of children left out of the Expanded Programme of Immunisation (EPI) target group (those >1y) needs to be pushed further in our missions, as it represents one of the strongest added values of MSF in routine vaccination.

The distribution of vaccines was similar to previous years (Figure 2). Oral polio vaccine represented 30% of doses given while Pentavalent Vaccine (Diphtheria-Tetanus-Pertussis (DTP)-HepB-Hib) represented about one quarter (24%); Bacille Calmette-Guérin (BCG) and Hepatitis B accounted for 13% and 11% each. Measles-Containing Vaccines (MCV) represented 8% of doses given and Pneumococcus Conjugate Vaccine (PCV), 6%. The Inactivated Polio Vaccine (IPV), and Yellow Fever Vaccine represented 6% and 3% respectively. Rotavirus continues to be an underused vaccine in MSF activities.

The distribution of vaccines routinely given to older children (>5 years) showed that about half (44%) of the doses were Hepatitis B, one-third (33%) were represented by Polio and 18% by Measles-Containing Vaccine (MCV).

Of the doses given to children <12 months, 110,976 (27%) were the neonatal doses of polio and Hepatitis B vaccines (OPV0 and HepB0). Although 53,267 live births occurred in MSF OCB-supported structures in 2020, it was not possible to calculate the vaccination coverage for newborns since children born outside supported facilities were included in the vaccination totals. In addition, doses not provided by MSF were not included in the data. A detailed analysis at project level is needed to assess the performance of the services in avoiding missed vaccination opportunities (MVO) in newborns.

Doses of tetanus vaccine have increased compared to 2019 (71,597 vs. 53,701) but, unfortunately, only 17% (12,316) were provided to non-pregnant women. This represents a net decrease compared to last year, where 48% of the total doses of tetanus vaccine were provided to non-pregnant women. Tetanus vaccination integrated into Family Planning and Prenatal Clinics needs to be strengthened in OCB-supported facilities. In addition, several projects continue to use Tetanus Toxoid (TT) formulation when the switch to Tetanus diphtheria (Td) has been recommended for some years.
2.2. POST-EXPOSURE PROPHYLAXIS

In 2020, 28,304 doses (41,551 in 2019) of vaccines and vaccine products were used for Post-Exposure Prophylaxis (PEP) in MSF OCB projects (Table 1). This confirmed the negative decreasing trend we have observed since 2018.

<table>
<thead>
<tr>
<th>Type of victims</th>
<th>Vaccine product</th>
<th>Doses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wounded</td>
<td>Tetanus</td>
<td>8459</td>
<td>29.9%</td>
</tr>
<tr>
<td></td>
<td>Tetanus Ig</td>
<td>2176</td>
<td>7.7%</td>
</tr>
<tr>
<td>Sexual and Gender-Based Violence (SGBV)</td>
<td>Tetanus</td>
<td>6529</td>
<td>23.1%</td>
</tr>
<tr>
<td></td>
<td>Hepatitis B</td>
<td>11064</td>
<td>39.1%</td>
</tr>
<tr>
<td></td>
<td>Tetanus Ig</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td>Suspected bites</td>
<td>Rabies</td>
<td>7</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Rabies Ig</td>
<td>53</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>Snake antivenom</td>
<td>0</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Ig: Immunoglobulin

It is likely that the low number of doses recorded is due to a lack of documentation, especially in hospital settings known to manage patients suffering trauma. Knowing that rabies and snake bites represent a significant burden in most of our settings we do fear that proper management of animal and snake bites is a concern in our projects.

2.3. MASS VACCINATION CAMPAIGNS

A total of 331,163 (231,672 in 2019) doses of Measles Vaccine were used in eight reactive campaigns, four of which were in DRC, three in CAR and one in Mali.

2.4. EVALUATIONS AND SURVEYS

To our knowledge, none of the missions evaluated their missed vaccination opportunities (MVO) in 2020. Vaccination coverage surveys were conducted after three out of four campaigns in DRC, while in other contexts, they were postponed or cancelled because of security issues or COVID-19.

3. OTHER ACTIVITIES (FIELD VISITS, DEVELOPMENTS AND INNOVATION, TRAININGS/CONFERENCES/METTINGS)

In 2020, because of the restrictions related to COVID-19, field visits were not conducted and face-to-face training was cancelled. The team participated in the online edition of the training on Response to Epidemics (REPEPI) and to the Preparedness and Response to Epidemics international meeting.

The team continued to participate in the Migration Circle, the Primary Health Care Circle, the Integrated Management of Inpatient Malnourished children (IMIM) Circle and the Outbreak Circle.

The vaccination team attended online conferences: St Valentin Vaccine Symposium (Brussels), two Strategic Advisory Group of Experts on Immunization (SAGE) meetings (Geneva), two Scientific Days (London and Paris) and three Vaccination Working Group meetings. The team also followed numerous online webinars about COVID-19 vaccines. The study on implementation of Human Papillomavirus (HPV) Vaccination among HIV-Positive Adolescent Girls and Young Women in Gutu, Zimbabwe was closed and the report shared with the authorities. The study on the effectiveness of Typhoid conjugate vaccine (TCV) in Harare was still ongoing due to slowdown of enrolment due to the COVID-19 situation. A third study on the appropriate interval between two doses of Oral Cholera Vaccine (OCV) was planned to be performed in Guinea but could not be started in 2020.
because of lack of financing for the study, political elections and disruptions caused by COVID-19. A poster about lessons learned from MVO evaluations performed in MSF projects was presented at the Scientific Day in London and publication of the findings is foreseen in 2021.

The article on stability of Measles Vaccine under Extended Controlled Temperature Conditions in DRC was successfully published in *Vaccine*.

The article “Diphtheria Antitoxin Administration, Outcomes, and Safety: Response to a Diphtheria Outbreak in Cox’s Bazar, Bangladesh” was published in *Clinical Infectious Diseases*. The protocol for a study about “Feasibility of a rapid test for tetanus and added value in an emergency department in Haiti” was approved by the MSF Ethics Review Board (ERB) and the study will start at the beginning of 2021.

A study on Measles Vaccine Effectiveness in DRC was prepared by Epicentre and approved by both local and MSF ERBs. The study will be performed during the first measles intervention in DRC in 2021.

A study on the effectiveness of Cholera Case-Area Targeted Interventions (CATI) including vaccination has been prepared by Epicentre and ERB approved. Hopefully, this study will be carried out in DRC and Zimbabwe in the next years.

### 4. LOOKING BACK AND AHEAD

#### 4.1. LESSONS LEARNED IN 2020

- The revision of the OCB tool to evaluate MVO has been undertaken and will be finalised at the beginning of 2021. A pilot will be conducted at field level.

- Inter-operational centre (OC) capitalisation of lessons learned from the response to measles epidemics in DRC has been completed and a report has been written. A workshop will be organised to discuss the findings and develop recommendations.

- A “wake-up call” document was produced by the Vaccination Working Group to remind operations that the pandemic would limit immunisation activities and create dangerous immunity gaps, inevitably triggering an upsurge of many vaccine-preventable diseases (VPDs). It was accompanied by a guidance document on how to safely continue immunisation activities during the pandemic.

- Factsheets about COVID-19 vaccine candidates were developed and regularly updated.

- A series of informative webinars about COVID-19 vaccination were held with different audiences (field, office, associative, medical department, Italy, literacy workshop in South Africa).

- The vaccination chapters of several guidelines were revised (Diphtheria chapter of clinical MSF guidelines, HIV, Nutrition, Neonatal).

#### 4.2. PROSPECTS FOR 2021

- OCB will engage in an international analysis of the measles situation in Africa and develop a response strategy for MSF.

- Capitalisation of MSF measles interventions (epidemiological situation/operational choices) in Guinea will be undertaken to define lessons learned and inform operations for future interventions.

- Conduct an evaluation of vaccination hesitancy in rural and urban settings in Guinea.

- Conduct an evaluation of Case-Area Targeted Intervention (CATI) including vaccination for cholera response in DRC and Zimbabwe.

- Promote the organisation of multi-antigen preventive vaccination campaigns in response to emergencies – a half-day workshop with E-pool will be held.

- Disseminate the revised tool for evaluation of MVO and support for its implementation in all projects.
• Keep working on the integration of routine catch-up vaccination for all children <5 years in all projects.

• Ensure follow-up of several studies on vaccination: OCV in Guinea, TCV in Zimbabwe, Tetanus in Haiti, Measles Vaccine effectiveness in DRC.

• Implementation and documentation of measles vaccine in Extended Controlled Temperature Chain (ECTC) in DRC.

• Reinforce appropriate use of vaccine and vaccine products for PEP by all missions.

• Work together with the Sexual and Reproductive Health (SRH) team to ensure the use of Td as the tetanus-containing vaccine in all MSF projects.

A mother with her daughter who is being vaccinated against measles in a village in Timbuktu region, northern Mali. © Mohamed Dayfour/MSF
# OCB Medical Activity

## Annex of Tables and Data

## Contents

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<td>23. Operational Research &amp; Documentation</td>
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<td>24. Paediatric Care</td>
<td>170</td>
</tr>
<tr>
<td>28. Surgical Activities</td>
<td>173</td>
</tr>
</tbody>
</table>
HIV

ANNEX 1 OCB PROJECTS TESTING FOR HIV, BY REGION (vertical HIV projects underlined)

Eastern and Southern Africa (ESA): Kenya (Kiambu), Malawi (corridor, Nsanje, Niono), Mozambique (Beira, HIV/SRH, Beira typhoon, Cabo Delgado), South Africa (Khayelitsha, Eshowe, Rustenburg), Zimbabwe (Beitbridge, Mbare, Gutu)

West and Central Africa (WCA): Burundi (Arche Bujumbura), Cameroon (North West Anglophone), Central African Republic (Bangassou, Banqui HIV & Grand Bangui SRH), Democratic Republic of Congo (Kasai Central, Masisi and Kinshasa), Guinea (Kouroussa, Conakry), Nigeria (Maiduguri), Sierra Leone (Gorama Mende, Kambia), South Sudan (Maban/Doro, Yei)

Middle East and North Africa (MENA): Egypt (Cairo, Maadi), Iraq (Mosul)

Asia: Bangladesh (Jamtoli camp), India (Mumbai, Uttar Pradesh, Chhattisgarh), Indonesia (Banten)

Europe: Greece (Lesvos), Italy (rural migrants), Ukraine (Zhytomyr)

Caribbean: Haiti (Tabarre, Port-à-Piment)

South America: Bolivia (El Alto), Venezuela (Anzoátegui)

ANNEX 2 HIV Testing in OCB projects, 2018-2020: Facility vs. Community

<table>
<thead>
<tr>
<th>Year</th>
<th>Vertical (n)</th>
<th>Integrated (n)</th>
<th>Vertical</th>
<th>Integrated</th>
<th>Vertical</th>
<th>Integrated</th>
</tr>
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<tbody>
<tr>
<td>2018</td>
<td>9</td>
<td>16</td>
<td>9</td>
<td>30</td>
<td>7</td>
<td>34</td>
</tr>
<tr>
<td>2019</td>
<td>7</td>
<td>34</td>
<td>3</td>
<td>48</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>2020</td>
<td>9</td>
<td>30</td>
<td>7</td>
<td>73</td>
<td>2</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Positive Facility</th>
<th>Negative Facility</th>
<th>Facility-based + community-based</th>
<th>Overall Positivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>305,898</td>
<td>72,356</td>
<td>17,359</td>
<td>5.4%</td>
</tr>
<tr>
<td>2019</td>
<td>81,493</td>
<td>73,622</td>
<td>1,969</td>
<td>2.1%</td>
</tr>
<tr>
<td>2020</td>
<td>73,622</td>
<td>72,356</td>
<td>92,259</td>
<td>9.1%</td>
</tr>
</tbody>
</table>

Number of people tests by year and testing type.
## LABORATORY SERVICES

### TABLE 1  Active laboratories either supported or run by MSF

<table>
<thead>
<tr>
<th>Country</th>
<th>Project (City)</th>
<th>No. of Labs</th>
<th>HIV &amp; TB</th>
<th>Transfusions (only)</th>
<th>Hospital (transfusions included)</th>
<th>Other</th>
<th>Project status</th>
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<tbody>
<tr>
<td>DRC</td>
<td>Kinshasa</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Masisi</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>Burundi</td>
<td>Bujumbura</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Kinyinya</td>
<td>1</td>
<td>X (malaria)</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>CAR</td>
<td>Bangassou</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Bangui</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>Kenya</td>
<td>Embu</td>
<td>1</td>
<td></td>
<td></td>
<td>NCD</td>
<td>1</td>
<td>To be closed in 2021</td>
</tr>
<tr>
<td>Guinea</td>
<td>Conakry</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Kouroussa</td>
<td>1</td>
<td>X (malaria)</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>South Sudan</td>
<td>Pibor</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Doro</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Yei</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>Ukraine</td>
<td>Donetsk</td>
<td>1</td>
<td>x</td>
<td></td>
<td>(+MDR)</td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Severodonetsk</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Gutu/Mutare</td>
<td>1</td>
<td></td>
<td></td>
<td>NCD</td>
<td>1</td>
<td>Closing in 2021</td>
</tr>
<tr>
<td></td>
<td>Beitbridge</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ongoing</td>
</tr>
<tr>
<td>South Africa</td>
<td>Khayelitsha</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>KwaZulu-Natal</td>
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<td>x</td>
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<td>Nigeria</td>
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<td>x</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Ebonyi</td>
<td>1</td>
<td></td>
<td></td>
<td>Lassa fever</td>
<td>1</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Nsanje</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Closed in Dec 2020</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>Kenema</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
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<td>Ongoing</td>
</tr>
<tr>
<td>Mozambique</td>
<td>Munhava PHC</td>
<td>1</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Beira hosp</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>ongoing</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>Khost</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>ongoing</td>
</tr>
<tr>
<td></td>
<td>Kunduz</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>To be opened</td>
</tr>
<tr>
<td>Pakistan</td>
<td>Timergara</td>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Closing in 2020</td>
</tr>
<tr>
<td></td>
<td>Karachi</td>
<td>1</td>
<td></td>
<td></td>
<td>x (HepC)</td>
<td>1</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Location</td>
<td>Site</td>
<td>Test</td>
<td>Control</td>
<td>Status</td>
<td></td>
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</tr>
<tr>
<td>India</td>
<td>Mumbai</td>
<td>1</td>
<td>1</td>
<td>Ongoing</td>
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<tr>
<td>Lebanon</td>
<td>Bar Elias</td>
<td>1</td>
<td>x</td>
<td>Ongoing</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Akkar</td>
<td>1</td>
<td>ANC</td>
<td>Ongoing</td>
<td></td>
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<tr>
<td></td>
<td>South Beirut</td>
<td>1</td>
<td>ANC</td>
<td>Ongoing</td>
<td></td>
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<tr>
<td>Iraq</td>
<td>Mosul</td>
<td>1</td>
<td>x</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Baghdad</td>
<td>1</td>
<td>x (TB)</td>
<td>ongoing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gaza</td>
<td>Gaza</td>
<td>1</td>
<td>x</td>
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</tr>
</tbody>
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OCB-RELATED SCIENTIFIC PUBLICATIONS 2020

COVID-19


EBOLA

- Boum, Y; Juan-Giner, A; Hitchings, M; Soumah, A; Strecker, T; Sadjo, M; Cuthbertson, H; Hayes, P; Tchaton, M; Jemmy, JP; Clarck, C; King, D; Faga, EM; Becker, S; Halis, B; Gunnstein, N; Carroll, M; Røttingen, JA; Kondué, MK; Doumbia, M; HenaoRestrepo, AM; Kierny, MP; Cisse, M; Draguez, B; Grais, RF. Humoral and cellular immune response induced by rVSVAG-ZEBOV-GP vaccine among frontline workers during the 2013–2016 West Africa Ebola outbreak in Guinea. Vaccine. 2020. doi: 10.1016/j.vaccine.2020.04.066 PMID: 32499066

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HIV


- Murray, J; Whitehouse, K; Ousley, J; Bermudez, E; Soe, TT; Hilbig, A; Soe, KP; Mon, PE; Tun, KT; Ei, WLSS; Cyr, J; Deglise, C; Ciglenecki, I. High levels of viral repression, malnutrition and second-line ART use in adolescents living with HIV: a mixed methods study from Myanmar. BMC Infectious Diseases. doi: http://dx.doi.org/10.1186/s12879-020-04968-x 2020. PMID: 32197588

- Moomba, K; Williams, A; Savory, T; Lumpa, M; Chilembo, P; Tweya, H; Harries, AD; Herce, M. Effects of real-time electronic data entry on HIV programme data quality in Lusaka, Zambia. Public Health Action. 2020. doi: http://dx.doi.org/10.5588/pha.19.0068 PMID: 32368524

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- Keshk, M; Harrison, R; Kizito, W; Psarra, C; Owiti, P; Timire, C; Camacho, MM; De Maio, G; Safwat, H; Matboly, A; Van den Bergh, R. Offering care for victims of torture among a migrant population in a transit country: a descriptive study in a dedicated clinic from January 2017 to June 2019. International Health 2020; 0: 1–9. doi: 10.1093/inthealth/iaaa068 PMID: 33021313
MIGRATION

- Belanteri, RA; Hinderaker, SG; Wilkinson, E; Episkopou, M; Timire, C; de Plecker, E; Mabhala, M; Takarinda, KC; Van den Bergh, R. **Sexual violence against migrants and asylum seekers. The experience of the MSF clinic on Lesvos Island, Greece.** PLoS ONE 15(9): e0239187. https://doi.org/10.1371/journal.pone.0239187 PMID: 32941533

NON-COMMUNICABLE DISEASES


NUTRITION


OTHER INFECTIOUS DISEASES

- Frank, T; Gil Cuesta, J; Mbecko, JR; Sanke, H; Lakis, C; FlecheMateos, AL; Berlioz-Arthaud, A. **First cases of Burkholderia cenocepacia IIIA neonatal sepsis in Central African Republic.** Pan African Medical Journal. 2020;36(330). doi: 10.11604/pamj.2020.36.330.24512

OUTBREAKS

- Coulborn, RM; Nackers, F; Bachy, C; Porten, K; Vochten, H; Ndele, E; Van Herp, M; Bibala-Faray, E; Cohuet, S; Panunzi, I. **Field challenges to measles elimination in the Democratic Republic of the Congo.** Vaccine. 2020. https://doi.org/10.1016/j.vaccine.2020.02.029 PMID: 32111528
- Makelele, JPK; Ade, S; Takarinda, KC; Manzi, M; Cuesta, JG; Acma, A; Yepez, MM; Mashak, M. **Outcomes of cholera and measles outbreak alerts in the Democratic Republic of Congo.** Public Health Action. 2020.
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- Kumar, M, Daly, M, De Plecker, E, Jamet, C, McRae, M, Markham, A, Batista, C. Now is the time: a call for increased access to contraception and safe abortion care during the COVID-19 pandemic. BMJ Global Health 2020;5:e003175. doi: 10.1136/bmjgh-2020-003175 PMID: 32690484

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Reuter, A; Furin, J. Treating drug-resistant tuberculosis infection: no more excuses. Clinical Infectious Diseases, ciaa328, https://doi.org/10.1093/ciaa328


VACCINE PREVENTABLE DISEASES

Juan-Giner, A; Alsalhani, A; Panunzi, I; Lambert, V; Van Herp, M; Gairrola, S. Evaluation of the stability of measles vaccine out of the cold chain under extended controlled temperature conditions. https://doi.org/10.1016/j.vaccine.2020.02.005

Sharp, A; Blake, A; Backx, J; Panunzi, I; Barrais, R; Nackers, F; Luquero, F; Gaston Deslouches, Y; Cohuet, S. High cholera vaccination coverage following emergency campaign in Haiti: Results from a cluster survey in three rural Communes in the South Department, 2017. PLoS Negl Trop Dis 14(1): e0007967. https://doi.org/10.1371/journal.pntd.0007967

VECTOR-BORNE DISEASES

Hossain, MS; Commons, RJ; Douglas, NM; Thriemer, K; Alemayehu, BH; Amaratunga, C; Anvikar, AR; Ashley, EA; Asih, PBS; Carrara, VI; Lon, C; D’Alessandro, U; Davis, TME; Dondorp, AM; Edstein, MD; Fairhurst, RM; Ferreira, MU; Hwang, J; Janssens, B; Karunajeewa, H; Kiechel, JR; Ladeia-Andrade, S; Laman, M; Mayxay, M; McGready, R; Moore, BR; Mueller, I; Newton, PN; Thuy-Nhien, NT; Noedl, H; Nosten, F; Phyoo, AP; Poespoprodjo, JR; Saunders, DL; Smithuis, F; Spring, MD; Stephniewska, K; Suon, S; Suputtamongkol, Y; Syaruddin, D; Tran, HT; Valecha, N; Van Herp, M; Van Vugt, M; White, NJ; Guerin, PJ; Simpson, JA; Price, RN. The risk of Plasmodium vivax parasitaemia after P. falciparum malaria: An individual patient data meta-analysis from the WorldWide Antimalarial Resistance Network. PLoS Med 17(11): e1003393. https://doi.org/10.1371/journal.pmed.1003393
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- Zachariah, R; Rust, S; Thekkur, P; Khogali, M; Kumar, AM; Davtyan, K; Diro, E; Satyanarayana, S; Denisiuk, O; Griensven, JV; Hermans, V; Berger, SD; Saw, S; Reid, A; Aseffa, A; Harries, AD; Reeder, JC. Quality, Equity and Utility of Observational Studies during 10 Years of Implementing the Structured Operational Research and Training Initiative in 72 Countries. Tropical Medicine and Infectious Disease. 2020.


- Ford, N; Brigden, G; Ellman, T; Mills, EJ. The time to act is now: pseudo-systematic review. BMJ 2020;371:m4143 http://dx.doi.org/10.1136/bmj.m4143
FIGURE 1  %Mortality in MSF Paediatric Inpatient Departments, 2020

Goal threshold for mortality

FIGURE 2  Paediatric mortality trends in MSF OCB 2018-2020

Project  2018  2019  2020
FIGURE 3  Mortality and leaving against medical advice (LAMA) rates MSF OCB neonatal projects in 2020

Mortality >15% indicates need for improvement of services
Goal threshold for mortality
Acceptable threshold for LAMA

<table>
<thead>
<tr>
<th>Hospital</th>
<th>% Mortality</th>
<th>%LAMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangassou</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Bangui</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Masisi</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Pibor</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Maban/ Doro</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Khrott</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Niono</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>P17</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Timergara</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 1  iCCM/Community Health Activities for Children Across MSF OCB Projects

Package of Services Per Project

<table>
<thead>
<tr>
<th>Project</th>
<th>Kouroussa</th>
<th>Gorama Mende/Kenema</th>
<th>Niono</th>
<th>Bamenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria test and treat (&lt;5)</td>
<td>Malaria test and treat (all ages)</td>
<td>Malaria test and treat (&lt;15)</td>
<td>Malaria test and treat (all ages)</td>
<td></td>
</tr>
<tr>
<td>Treatment of non-bloody diarrhoea (&lt;5)</td>
<td>Treatment of non-bloody diarrhoea (all ages)</td>
<td>Treatment of non-bloody diarrhoea (&lt;15)</td>
<td>Treatment of non-bloody diarrhoea (all ages)</td>
<td></td>
</tr>
<tr>
<td>Malnutrition screening and referral of cases</td>
<td>Malnutrition screening and referral of cases</td>
<td>Treatment of acute respiratory infections (&lt;15)</td>
<td>Treatment of bloody diarrhoea (all ages)</td>
<td></td>
</tr>
<tr>
<td>Referrals to primary health care (PHCs)</td>
<td>Referrals to PHCs</td>
<td>Malnutrition screening and referral of cases</td>
<td>Treatment of acute respiratory infections (all ages)</td>
<td></td>
</tr>
<tr>
<td>Review of vaccination status and referral for vaccination</td>
<td>Screening and referral of pregnant women</td>
<td>Referrals to PHCs</td>
<td>Treatment of complicated malaria (all ages)</td>
<td></td>
</tr>
<tr>
<td>Mortality reporting for all ages</td>
<td>Mortality report for children &lt;5, maternal deaths and all ages</td>
<td>Review of vaccination status and referral for vaccination</td>
<td>Treatment of other conditions including (mental health disorders, trauma, SV and antenatal care (ANC))</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 2  Comparison of Package of Services

<table>
<thead>
<tr>
<th>Programme Component</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria testing and treatment</td>
<td>Kouroussa</td>
</tr>
<tr>
<td>Diarrhoea treatment</td>
<td>Y</td>
</tr>
<tr>
<td>Respiratory infection treatment</td>
<td>N</td>
</tr>
<tr>
<td>Referral to PHC</td>
<td>Y</td>
</tr>
<tr>
<td>Screening for malnutrition</td>
<td>Y</td>
</tr>
<tr>
<td>Vaccination status assessment</td>
<td>N</td>
</tr>
<tr>
<td>Services to pop. &gt;5 years</td>
<td>N</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Programme Component</th>
<th>Gorama Mende/Kenema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria testing and treatment</td>
<td>Y</td>
</tr>
<tr>
<td>Diarrhoea treatment</td>
<td>Y</td>
</tr>
<tr>
<td>Respiratory infection treatment</td>
<td>N</td>
</tr>
<tr>
<td>Referral to PHC</td>
<td>Y</td>
</tr>
<tr>
<td>Screening for malnutrition</td>
<td>Y</td>
</tr>
<tr>
<td>Vaccination status assessment</td>
<td>N</td>
</tr>
<tr>
<td>Services to pop. &gt;5 years</td>
<td>Y</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Programme Component</th>
<th>Niono</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria testing and treatment</td>
<td>Y</td>
</tr>
<tr>
<td>Diarrhoea treatment</td>
<td>Y</td>
</tr>
<tr>
<td>Respiratory infection treatment</td>
<td>Y</td>
</tr>
<tr>
<td>Referral to PHC</td>
<td>Y</td>
</tr>
<tr>
<td>Screening for malnutrition</td>
<td>Y</td>
</tr>
<tr>
<td>Vaccination status assessment</td>
<td>Y</td>
</tr>
<tr>
<td>Services to pop. &gt;5 years</td>
<td>Y</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Programme Component</th>
<th>Bamenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria testing and treatment</td>
<td>Y</td>
</tr>
<tr>
<td>Diarrhoea treatment</td>
<td>Y</td>
</tr>
<tr>
<td>Respiratory infection treatment</td>
<td>Y</td>
</tr>
<tr>
<td>Referral to PHC</td>
<td>?</td>
</tr>
<tr>
<td>Screening for malnutrition</td>
<td>?</td>
</tr>
<tr>
<td>Vaccination status assessment</td>
<td>?</td>
</tr>
<tr>
<td>Services to pop. &gt;5 years</td>
<td>Y</td>
</tr>
</tbody>
</table>
# Programme Data Across Projects

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Kouroussa, Guinea</th>
<th>Gorama Mende, Sierra Leone</th>
<th>Bamenda, Cameroon</th>
<th>Niono, Mali</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total no. of children &lt;5 seen</strong></td>
<td>44498</td>
<td>28398</td>
<td>4346</td>
<td>10456</td>
<td>1295</td>
</tr>
<tr>
<td><strong>Total no. of children &lt;15 seen</strong></td>
<td>56650</td>
<td>NA</td>
<td>Not reported</td>
<td>21166</td>
<td>2726</td>
</tr>
<tr>
<td><strong>Malaria &lt;5</strong></td>
<td>29794</td>
<td>19276</td>
<td>3831</td>
<td>6120</td>
<td>567</td>
</tr>
<tr>
<td><strong>Diarrhoea &lt;5</strong></td>
<td>6147</td>
<td>4039</td>
<td>915</td>
<td>993</td>
<td>200</td>
</tr>
<tr>
<td><strong>Acute respiratory infection &lt;5</strong></td>
<td>Incomplete</td>
<td>NA</td>
<td>NA</td>
<td>932</td>
<td>361</td>
</tr>
<tr>
<td><strong>% &lt;5 screened for malnutrition (excluding Bamenda)</strong></td>
<td>95.4</td>
<td>100</td>
<td>96.7</td>
<td>NA</td>
<td>91</td>
</tr>
<tr>
<td><strong>Number referred (excluding Bamenda)</strong></td>
<td>7162</td>
<td>6139</td>
<td>698</td>
<td>NA</td>
<td>325</td>
</tr>
<tr>
<td><strong>% requiring referral</strong></td>
<td>16.6</td>
<td>21.6</td>
<td>16.1</td>
<td>NA</td>
<td>12</td>
</tr>
<tr>
<td><strong>Number completed referral</strong></td>
<td>Incomplete</td>
<td>3756</td>
<td>580</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>% completion of referral</strong></td>
<td>Incomplete</td>
<td>61</td>
<td>83.1</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Number with vaccination status screened</strong></td>
<td>Incomplete</td>
<td>28379</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>% with complete vaccination status</strong></td>
<td>Incomplete</td>
<td>54</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
### Table 4: Summary of main indicators by project for 2020 (including Syria)

<table>
<thead>
<tr>
<th>Mission</th>
<th>AFG</th>
<th>BDI</th>
<th>CAF</th>
<th>CAF</th>
<th>DRC</th>
<th>IRQ</th>
<th>LBN</th>
<th>PSE</th>
<th>PAK</th>
<th>CAM</th>
<th>SYR</th>
<th>YEMEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>Khost</td>
<td>Bujumbura</td>
<td>Bangassou</td>
<td>Castor</td>
<td>Masisi/Nyabiondo</td>
<td>East Mosul</td>
<td>Bar Elias</td>
<td>Al-Awda</td>
<td>Timergara</td>
<td>Bamenda</td>
<td>P-17</td>
<td>Mocha</td>
</tr>
<tr>
<td>Cases</td>
<td>No. 730</td>
<td>1212</td>
<td>773</td>
<td>1973</td>
<td>107</td>
<td>1216</td>
<td>175</td>
<td>2178</td>
<td>382</td>
<td>7370</td>
<td>1680</td>
<td></td>
</tr>
<tr>
<td>Interventions</td>
<td>No. 744</td>
<td>2977</td>
<td>1814</td>
<td>3467</td>
<td>297</td>
<td>1248</td>
<td>558</td>
<td>2191</td>
<td>1696</td>
<td>7466</td>
<td>3232</td>
<td></td>
</tr>
<tr>
<td>All trauma</td>
<td>%</td>
<td>100</td>
<td>23.5</td>
<td>24</td>
<td>94.3</td>
<td>0.17</td>
<td>100</td>
<td>0.23</td>
<td>75.9</td>
<td>0.23</td>
<td>22.5</td>
<td>83</td>
</tr>
<tr>
<td>Violent trauma</td>
<td>%</td>
<td>9.5</td>
<td>3.2</td>
<td>12.3</td>
<td>35.0</td>
<td>0.1</td>
<td>56.5</td>
<td>6.9</td>
<td>49.8</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Caesarean section</td>
<td>%</td>
<td>66.2</td>
<td>11.5</td>
<td>43.3</td>
<td>92.1</td>
<td>15.4</td>
<td>21.2</td>
<td>7.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-op infection</td>
<td>%</td>
<td>7</td>
<td>5.26</td>
<td>1</td>
<td>5.4</td>
<td>24</td>
<td>0.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary interventions</td>
<td>%</td>
<td>97.7</td>
<td>40.5</td>
<td>99.5</td>
<td>56.9</td>
<td>36.0</td>
<td>95</td>
<td>42.3</td>
<td>99.4</td>
<td>22.2</td>
<td>98.7</td>
<td>52.0</td>
</tr>
<tr>
<td>Emergent cases</td>
<td>%</td>
<td>65.0</td>
<td>30.1</td>
<td>23.5</td>
<td>35.6</td>
<td>2.2</td>
<td>99.9</td>
<td>17.2</td>
<td>41.2</td>
<td>31.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor/wound surgery</td>
<td>%</td>
<td>NA</td>
<td>55.7</td>
<td>46.6</td>
<td>16</td>
<td>10</td>
<td>NA</td>
<td>76.1</td>
<td>73.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spinal anaesthesia</td>
<td>%</td>
<td>77.8</td>
<td>36.0</td>
<td>25.9</td>
<td>27.5</td>
<td>29.0</td>
<td>57.1</td>
<td>18.8</td>
<td>91.3</td>
<td>62.1</td>
<td>NA</td>
<td>13.9</td>
</tr>
<tr>
<td>Spinal procedure/C-section</td>
<td>%</td>
<td>94.4</td>
<td>NA</td>
<td>90.8</td>
<td>90.7</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>94.8</td>
<td>62.1</td>
<td>95.8</td>
<td>81.9</td>
</tr>
<tr>
<td>Intra-operative mortality</td>
<td>%</td>
<td>0.26</td>
<td>0.12</td>
<td>0.14</td>
<td>0.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 provides a summary of all surgical activities for OCB in 2020.