MSF Access Campaign
Technical Briefing Document
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A Shared Responsibility: MSF calls on G20 leaders to manage a crisis of drug-resistant pathogens with the right tools, practices and principles

As a medical humanitarian organization, Médecins Sans Frontières (MSF) witnesses first-hand the public health challenges caused by antimicrobial resistance (AMR) in a wide range of our operational contexts, including antibiotic resistance (ABR), drug-resistant tuberculosis (DR-TB) as well as resistance to treatments for malaria, HIV and other infectious diseases.

Neglected for many decades, AMR represents one of the greatest issues we collectively face today as it endangers achievements in basic and modern medicine. At the core of this crisis is TB and its drug-resistant forms, already the world's deadliest infectious disease. As the largest non-government provider of care for people with DR-TB, MSF is confronted daily with numerous and persistent gaps, including poor access to the diagnostic and treatment tools needed to successfully treat TB and prevent transmission, and a lack of research and development (R&D) to generate more adequate tools. By 2050, DR-TB could cause up to one quarter of an estimated ten million deaths every year due to AMR.[1]

The crisis of antibiotic resistance: addressing drug-resistant bacterial infections

As can be seen in Table 1, higher than expected rates of drug-resistant infections have been identified in several MSF projects with access to reliable microbiology – ranging from burn patients in Haiti to children in Mali – including infections that can only be treated with the very last lines of antibiotics. In low- and middle-income country (LMIC) contexts where MSF mostly operates, we witness many obstacles in successful management of these infections. These include surveillance gaps, insufficient or non-existing laboratory and diagnostic capacities, under-resourced health systems, lack of access to existing tools that could help prevent infections in the first place, lack of access to life-saving antibiotics and lack of human resources.

Table 1: Snapshot of MSF projects facing challenges with AMR

Pathogen	AMR rates	Site
ESBL-producing *K. pneumoniae*	59% among neonates and 27% among women resistant to 1st line antibiotics	MSF Obstetric and Neonatal Emergency Care Hospital, Haiti[2]
MRSA and ESBL-producing *Enterobacteriaceae*	66.1% of MRSA isolates resistant to cefoxitin; 73.5% of ESBL-producing *Enterobacteriaceae* isolates resistant to 3rd generation cephalosporins	MSF surgical program in Amman, Jordan, from 2010 to 2015[3]
MDR Gram-positive pathogens **MDR Gram-negative pathogens**	92% of G+ isolates were multi-drug resistant, notably MRSA (100%) 63% of G- isolates were multi-drug resistant, notably *P. aeruginosa* (64%) and ESBL-producing *Enterobacteriaceae* (61.5%)	MSF Burn Care Unit, Iraq[4]
E. coli ***K. pneumoniae***	95.2% of isolates were resistant to ampicillin, 42% to ceftriaxone, 37% to tobramycin and gentamicin; 81% of isolates were resistant to ceftriaxone, 52% to gentamicin, 47% tobramycin	MSF and the Ministry of Health in Mali, in collaboration on a project aimed at reducing <5 infant mortality in south Mali[5]

The importance of policy coherence in the global response

The multilateral consensus at the United Nations achieved through the **2016 UN High Level Political Declaration on AMR** and the **World Health Organization Global Action Plan on AMR** provides a political and public health

blueprint to address the many facets of AMR. Hence, all G20 commitments should be based on the principles enshrined in both declarations. In particular, the G20 should support and ensure an ambitious **WHO Development and Stewardship Framework on AMR** that adheres to the principles of affordability, accessibility, transparency and shared responsibility. These are particularly relevant for commitments to R&D initiatives such as the AMR Coordination Hub.

In order to enable affordable treatment strategies and effective stewardship policies, new incentives for the development of improved treatment options must separate the financing of R&D from the expectation of high prices and product sales. Beyond R&D, many other areas of cooperation will require commitments from G20 countries, as summarized below:

Table 2: Cooperation gaps relating to G20 2017 commitments

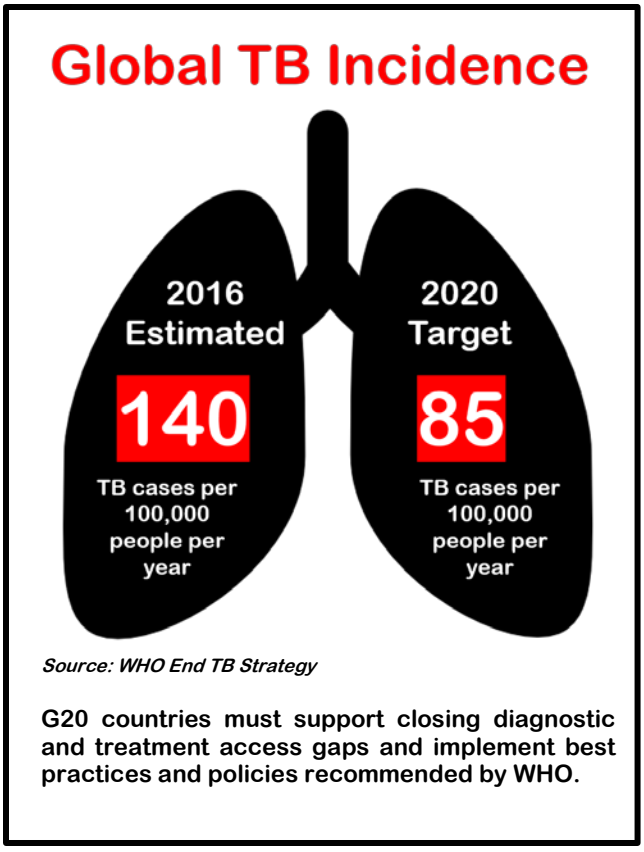
Gap	Impact	G20 commitments (2017)	Improvements needed in 2018
Lack of adequate data in many countries.	Undermines the definition of a global priority pathogens list.	"We will cooperate with low- and middle-income countries to build their AMR surveillance capacity."	Commit technical support to enable surveillance systems to be strengthened or set up in LMICs.
Lack of international funding.	Blocks the implementation of national plans by LMICS.	"implementation of our National Action Plans"	Secure financial and technical support for national plans in LMICS, with a focus on monitoring and surveillance capacities, context-adapted diagnostics, setting-specific interventions, stewardship frameworks and health system strengthening.
Lack of affordable access to existing tools, such as vaccines, diagnostics and antibiotics.	11.4 million days of antibiotics use could be avoided annually with universal access to pneumococcal conjugate vaccine (PCV). Wide availability of lab capacity to diagnose pathogens and drug sensitivity testing would allow rational use of appropriate antibiotics, critical to stewardship efforts.	"access to affordable and quality antimicrobials, vaccines and diagnostics"	Support solutions to assure sustainable and affordable access to effective antimicrobials and preventative tools for everyone in need, including quality production, multiple manufacturers, wide availability, timely registration and use of TRIPS flexibilities to ensure affordability.
Innovation crisis regarding the development of improved treatment options, including better use of existing antibiotics and development of new ones.	Health professionals are often left empty-handed.	Highlighted the importance of "fostering R&D" and called for a "new international R&D Collaboration Hub"	Concrete and lasting commitments to provide financial, technical and political support for new approaches to R&D to tackle AMR that include strong public health safeguards, needs-driven priorities and delivery of accessible, affordable, and appropriate medical tools for all, as outlined in the 2016 UN High Level Political Declaration on AMR.
Lack of innovation in infection prevention and control practices.	Implementation of practices that prevent infection from occurring and spreading, including infection prevention and control (IPC) measures and water supply, sanitation and hygiene promotion (WASH) standards, could halve the number of cases of diarrhoea that need to be treated with antibiotics.	"support action to promote immunization and strengthen water, sanitation and hygiene provision and promote awareness campaigns"	Policymaker and funder attention must focus on innovations to improve infection prevention and control practices.

The Global AMR R&D Collaboration HUB: checklist for a people-centred approach

- ✓ **Priority setting** that covers the needs of patients in low- and middle-income countries
- ✓ **R&D principles** in line with the 2016 UN High Level Political Declaration on AMR
- ✓ **Innovative incentive mechanisms** that simultaneously promote innovation and access
- ✓ **R&D approaches** that do not rely on the proceeds of sales to pay for R&D costs ("de-linkage")
- ✓ **Policy coherence** with best practices, standards, norms and priorities set by WHO
- ✓ **Governance** that enables strong and continuous involvement of Civil Society Organizations

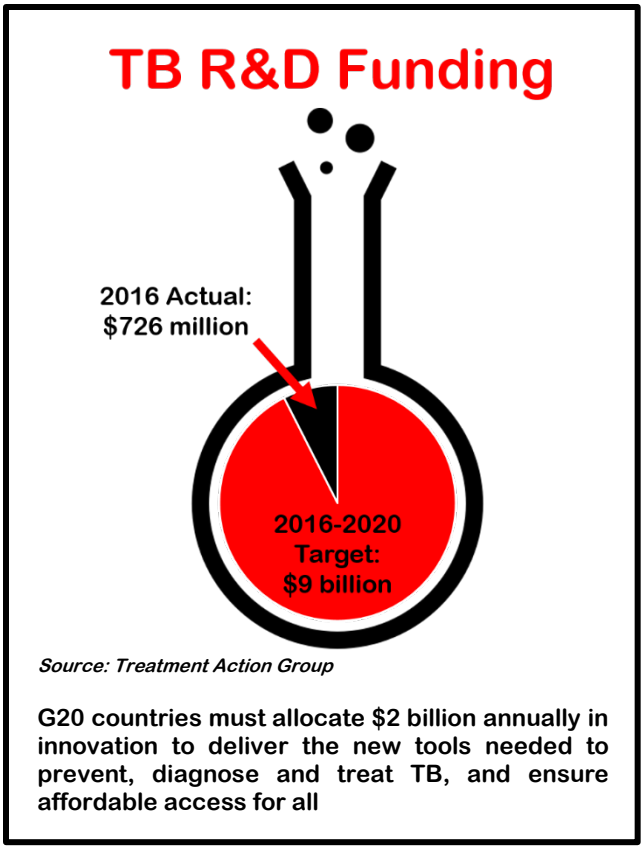
Tuberculosis: a political emergency

The WHO declared TB a health emergency in 1994 and 2005[6], and then declared drug-resistant TB a Global Emergency in 2014 and again in 2017, but the current global response is failing to curb the epidemic and is failing people with TB. Tuberculosis remains not only a medical emergency but also a political emergency. Beyond our work in treating TB patients in 68 TB projects across 26 countries, MSF is actively engaged in clinical trials and other studies to assess and document improved treatment options[7,8] and in spearheading new approaches to R&D[9]. But much more needs to be done to reduce death and illness from TB. Mounting an effective response to the TB global health emergency requires stronger political commitments by world leaders to prevent, diagnose and treat TB, to provide patient-centred care, and to accelerate research into new TB medicines, diagnostic tools and vaccines that are effective, affordable and suitable to control TB.



Source: WHO End TB Strategy

G20 countries must support closing diagnostic and treatment access gaps and implement best practices and policies recommended by WHO.



Source: Treatment Action Group

G20 countries must allocate $2 billion annually in innovation to deliver the new tools needed to prevent, diagnose and treat TB, and ensure affordable access for all

Seizing the opportunity: political momentum and urgent action

2017 ushered in a wave of unprecedented political momentum on TB: the first **Global Ministerial Conference focused on TB in the era of the SDGs** was held in Moscow, the BRICS countries advanced their **TB cooperation plan**, and the **G20 Health and Leaders' declarations** highlighted the need to prioritize tuberculosis in the efforts to address AMR. In September 2018, the United Nations will host the first **UN High-Level Meeting on TB.** Together, these initiatives have the potential to garner much-needed political will and high-level commitments from governments to address TB, both nationally and globally.

The G20 countries have a crucial role to play in translating this political momentum into concrete action: more than 46 per cent of all deaths from TB occur in G20 countries. MSF urges the G20 countries to seize the opportunity of this pivotal moment to ensure that G20 declarations play a crucial role in ensuring concrete policy commitments for a global coordinated response to TB as part of the broader AMR agenda.

In addition, we encourage the G20 countries to commit to covering the TB R&D funding gap by 2020. In 2017, the G20 declaration emphasized the need **"to develop and promote access to new drugs, diagnostics and vaccines to tackle drug-resistant tuberculosis."** As the G20 works to implement these commitments, they must insure that investments are used to spearhead collaborative approaches to R&D, such as The Life Prize, which aims to deliver affordable short course effective regimens to cure TB. It is critical that new mechanisms to promote and conduct R&D adhere to the principles agreed upon by all countries under the 2016 UN High Level Declaration on AMR, especially "de-linkage", in order to equitably deliver TB medicines, diagnostic tools and vaccines that are effective, affordable and suitable to control TB.

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[1] O'Neill J, et al. Tackling drug-resistant infections globally: Final report and recommendations. [Online]. The Review on Antimicrobial Resistance. 2016 [Cited 2018 Apr 18]. Available from: https://amrreview. org/sites/default/files/160518_Final%20paper_with%20cover.pdf.

[2] Chaintarli et al. Antimicrobial resistance in low-resource settings - a point prevalence survey in the MSF hospital "Centre de Référence pour les Urgences Obstétricales", Port au Prince, Haiti – poster

[3] Baghdadi et al. Post conflict disaster bone infection - Resistance on the front line – poster

[4] Ronat J-B et al. (2014) Highly Drug-Resistant Pathogens Implicated in Burn-Associated Bacteremia in an Iraqi Burn Care Unit. PLoS ONE 9(8): e10101

[5] Malou et al Causes of bacteraemia in children <5 years in southern Mali – presentation

[6] http://www.who.int/mediacentre/news/releases/2005/africa_emergency/en/

[7] MSF is involved in two clinical trials, EndTB and PRACTECAL, to find new TB treatment regimens.

[8] See "Early safety and efficacy of the combination of bedaquiline and delamanid for the treatment of patients with drug-resistant tuberculosis in Armenia, India, and South Africa: a retrospective cohort study" published at The Lancet Infectious Diseases in February 2018.

[9] MSF supports an initiative, The Life Prize, to find a better way to develop newer molecules for effective DR-TB treatments in the future.