

# ANTIMICROBIAL RESISTANCE IN CONFLICT-AFFECTED SETTINGS: field realities, operational challenges and policy recommendations

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## INTRODUCTION

Antimicrobial resistance (AMR) is an escalating threat to public health, global food security and development projected to contribute to 8.2 million deaths annually by 2050.<sup>1</sup> Its impact is particularly acute in fragile and conflict-affected settings, where inadequate access to diagnostics and appropriate antimicrobials leads to more patients carrying resistant pathogens, making Infection Prevention and Control (IPC) measures harder to sustain and creating conditions in which these organisms can spread rapidly.

Recognising the urgency of this threat, the AMR Multi-Stakeholder Partnership Platform (MSPP) hosted a dialogue to share knowledge and experience from one of its members, Médecins Sans Frontières (MSF), during World AMR Awareness Week (18-24 November 2025). The discussion

brought together experts Dr Aula Abbara (Imperial College London/The Fleming Initiative), Dr Kalyan Velivela (MSF Nairobi), Dr Muhammed Shaffi Fazaludeen Koya (WHO EMRO) and Alaa Abed (MSF Gaza), moderated by Dr Rupa Kanapathipillai (MSF) to explore the intersection of conflict, fragility, and AMR.<sup>2</sup>

The webinar drew 895 people registered from more than 150 countries, with 348 participants joining live, underscoring the global relevance of this critical issue. This brief distils key insights from the discussion, connecting global policy priorities with field experience in conflict-affected settings and offering practical recommendations for addressing AMR in some of the world's most fragile contexts, with lessons relevant worldwide.

**AMR in conflict zones is a complex challenge with no one-size-fits-all solution. MSF is often the only humanitarian actor addressing AMR, and Ministries of Health increasingly seek support. Scaling up the response demands adaptability, innovation and, most importantly, collective action.**

” DR RUPA KANAPATHIPILLAI, MSF AMR STEWARDSHIP LEAD

## I

## AMR IN CONFLICT AND HUMANITARIAN SETTINGS AND ITS IMPACT ON HUMAN HEALTH

Over two billion people are estimated to live in conflict-affected settings, and, in 2025, forced displacement affected an unprecedented 122 million people.<sup>3,4</sup> In 2024, 37.2 per cent of MSF's projects were situated in conflict-affected settings.<sup>5</sup> Conflict amplifies every driver of AMR, yet no two crises are alike. Severity, duration, and stages of conflict or recovery, combined with social and political dynamics and pre-conflict baselines, directly shape health outcomes in complex ways.

These dynamics often manifest in systemic collapse of essential services: disrupted healthcare systems interrupt essential supply chains, limiting access to medical tools; damaged water and food systems increase the risk of malnutrition, leaving people more vulnerable to infections; interrupted sanitation systems reduce the effective implementation of IPC, accelerating the spread of infectious diseases.<sup>6</sup> These factors not only influence how AMR emerges and spreads but also demand adaptable and context-specific strategies from humanitarian stakeholders working under extreme constraints.

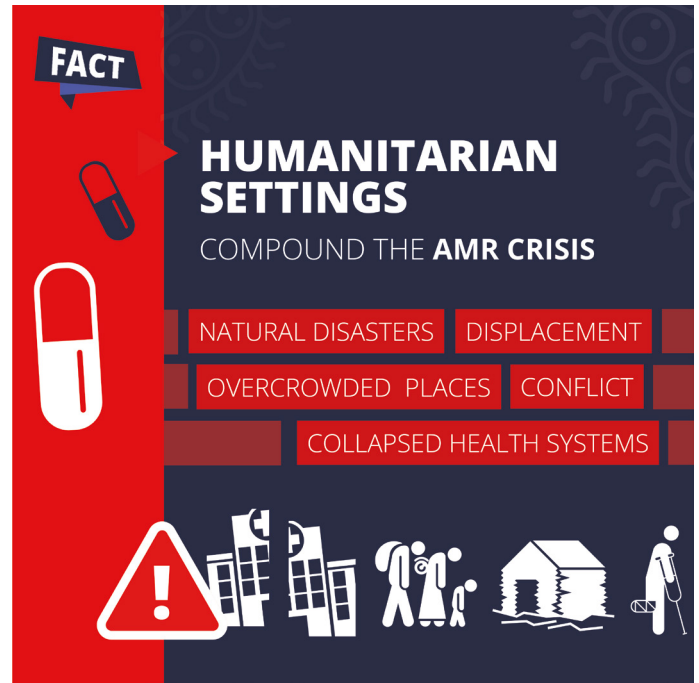


FIGURE 1: HUMANITARIAN SETTINGS COMPOUND THE AMR CRISIS

## II

## VOICES FROM THE FRONTLINE

Behind every number there's a human being, there's a community, someone directly affected by AMR and multidrug-resistant organisms in a way that can be potentially life-changing and have significant and major impacts both in the immediate term and in the longer term.

” DR AULA ABBARA, HONORARY SENIOR CLINICAL LECTURER AND CONSULTANT IN INFECTIOUS DISEASES AT THE IMPERIAL COLLEGE LONDON

### When crises collide

*Dr Kalyan Velivela, MSF health programme manager for South Sudan, Ethiopia, and Nigeria, has worked in some of the most fragile contexts since 2008. Drawing from years of experience, he*

*describes how overlapping crises are driving AMR and overwhelming already fragile health systems.*

” We are seeing everything coming together at once: contexts becoming more complex and crises increasingly compounded, multi-layered



COMFORT AGBESE, IPC SUPERVISOR IN JAHUN AND MSF ACADEMY LEARNER OF THE AMR PROGRAMME, PROMOTING HAND WASHING IN THE MEDICAL FACILITY SHE WORKS AT, JAHUN, NIGERIA, 2023.

and protracted. We are seeing internally displaced communities, refugees and people on the move; extreme climate events like flooding; and changing intensities in the scale, scope, and recurrence of disease outbreaks.

All this is happening in fragile health systems facing reduced resources and funding, both nationally and across the external humanitarian landscape.

Clinically, we are also seeing increasingly complex cases: severely malnourished children, premature babies with sepsis, and patients with severe wounds. Where microbiology is available, antibiograms show high resistance to antibiotics. In very remote settings, we are seeing resistance to *Staphylococcus aureus*, *Klebsiella pneumoniae*, and even isolates of *Acinetobacter baumannii*, listed by the World Health Organization as a critical organism resistant to multiple antibiotics.<sup>7</sup>

**Where we have access to antibiotics, we can treat these patients. Where the appropriate antibiotics to manage complicated cases are lacking, it is challenging for clinicians.**

Given these constraints, Infection Prevention and Control (IPC), antimicrobial stewardship (AMS) and microbiology are key essential strategies to provide quality care. Yet, to make them work, a close collaboration with stakeholders and government representatives to scale up microbiology, improve basic structures, maintain minimal IPC standards, and build capacity to address AMR effectively is needed.

**AMR in conflict or humanitarian settings is right there. It's in front of us. We are already dealing with it.**

We need simplified toolkits, point-of-care and rapid diagnostics that are cost effective, field-tested, and usable in conflict-affected and huma-

nitarian settings. We need dedicated commitments from national authorities, humanitarian actors, international organisations and funding agencies to continue and expand financial support for humanitarian responses — and probably include a dedicated focus on AMR. Yet funding for humanitarian settings is on a downward trajectory.

**Preventing and addressing the drivers of AMR strengthens entire health systems [...] But it requires more commitment and action. Acting on them rather than just speaking about them. ”**

## When health systems collapse

*Alaa Abed, MSF Infection Prevention and Control (IPC) supervisor in Gaza, has worked across multiple facilities since 2022. Her account reveals how*

*a functioning IPC system collapsed overnight and why basic measures matter, especially in a crisis.*

” **In the early acute stage of the war [in Gaza], there was a surge of injured cases, making it almost impossible to maintain basic IPC measures. Facilities designed for 250–300 patients per day were seeing 700, leading to extreme overcrowding.**

Due to the overwhelming number of cases, all infected patients were housed in one tent, regardless of pathogens or required precautions. Examination beds could not be cleaned between patients, and wound care was often performed on a shared trolley. Later, we witnessed a complete breakdown of health and water infrastructure. In more stable times, we outsourced laundry to a nearby industrial facility. That facility was damaged in the first week of war and reaching it became impossible. Waste management also collapsed.



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PATIENTS IN NASSER HOSPITAL IN URGENT NEED OF MEDICAL EVACUATION, PALESTINE, 2026

### Clean water became a dream.

Water infrastructure was damaged, and hospitals resorted to domestic water mixed with salty seawater, corroding scarce surgical instruments and equipment. Sometimes water was not available at all. Patients with sand-contaminated wounds were asked to wash in toilets, only to find there was no water.

**Despite staff dedication and commitment, we faced extreme shortages of essential medical items. We cut abdominal gauze into five pieces to cover gaps in sterile gauze.**

Today, available labs report very high multidrug resistance (MDR) rates. Despite not being able to confirm exact resistance rates, we already see

increased infection rates among wounded patients. On average 18.3 per cent, reaching as high as 37 per cent in some supported facilities.

**It became clear later that even the basic measures we took improved the situation.**

We need to start considering IPC a priority, especially during crises and conflicts, and adapt programmes to suit these contexts. It is also important to expand access to quality, reliable microbiology, ensure the uninterrupted supply of critical medical and hygiene materials, and invest in restoring fundamental infrastructure, including clean water, sanitation, and waste management systems, which are essential for preventing the spread of pathogens. ”

## III

## KEY TAKEAWAYS AND CONCLUSIONS: TURNING FRONTLINE EXPERIENCE INTO ACTION

**We must never think of AMR as being a vertical intervention. It should be holistic because it is not something that occurs in isolation.**

” DR AULA ABBARA, HONORARY SENIOR CLINICAL LECTURER AND CONSULTANT IN INFECTIOUS DISEASES AT THE IMPERIAL COLLEGE LONDON

Crises differ, but the insights shared during the webinar reveal common challenges. Addressing AMR in conflict-affected and humanitarian settings requires integrated and coordinated action across all levels of care and policymaking and across all sectors given the disruptive nature of conflicts. Drawing on this collective expertise, the following conclusions can help guide responses while recognising the severe resource limitations, operational constraints, and unpredictability that define these contexts.

” **We need to have tailored approaches to the contexts where we operate.**

MUHAMMED SHAFFI FAZALUDEEN KOYA,  
TECHNICAL ADVISOR AT WHO OFFICE FOR  
THE EASTERN MEDITERRANEAN REGION

- **Protect civilians, healthcare workers and health systems during conflicts.** Ensure safe access to healthcare and supplies, guaranteeing humanitarian corridors for timely access to medicines and supplies, and ensuring the protection of healthcare workers and facilities as a prerequisite for all AMR interventions.
- **Prioritise Infection Prevention and Control (IPC) in emergencies.** Make IPC a non-negotiable priority, adapting protocols to resource-limited and high-risk contexts to maintain essential standards of care and curb AMR spread. Include IPC measures in emergency preparedness (e-prep) plans, ensuring practicality and relevance to fragile settings.

- **Strengthen complementary preventive measures.** Expand vaccination coverage and reinforce water, sanitation, and hygiene (WASH) infrastructure to reduce infection risks and limit unnecessary antimicrobial use.
- **Ensure resilient supply chains for hygiene and medical tools, as well as food and food supplies.** Secure uninterrupted access to IPC essentials and critical medicines through strengthened logistics and pre-positioned buffer stocks. Include these items in emergency preparedness orders to guarantee timely humanitarian access.
- **Integrate antimicrobial and diagnostics stewardship in emergency protocols and workforce capacity.** Integrate antimicrobial stewardship and diagnostics into simplified clinical protocols and tools tailored to fragile and conflict-affected settings. Provide targeted training for frontline healthcare workers to ensure these measures, as well as IPC, are applied effectively under resource constraints.
- **Scale up access to microbiology and rapid diagnostics.** Ensure timely and easily deployable diagnosis to guide treatment decisions and strengthen antimicrobial stewardship efforts for individual patient care. Prioritise innovation for low-cost, point-of-care microbiology and rapid testing. Until these tools are widely available, use relevant, reliable pre-war data to update empirical protocols and, where feasible, refer samples to reference laboratories while maintaining supplies for functioning labs.
- **Strengthen AMR surveillance.** Expand AMR surveillance using simplified, low-burden protocols that enable routine data sharing. Where feasible, integrate environmental data and antibiotic use data to inform public health actions and support evidence-based and system-level decision-making.
- **Advance research and evidence generation.** Prioritise research on AMR in conflict-affected and humanitarian settings to address critical data gaps. Facilitate evidence generation to better understand resistance and develop adapted practices. Where local data is unavailable, compile data from patients referred to and treated in neighbouring or foreign facilities to inform protocols and research agendas.
- **Improve access to effective affordable antimicrobials.** Ensure availability of quality-assured affordable antimicrobials, including critical last-line agents, through diversified manufacturing, pooled procurement and humanitarian pricing. Align emergency kits with WHO's Access, Watch and Reserve (AWaRe) classification to support rational use and stewardship in crisis settings, and promote the development of adapted formulations, such as oral options, to better meet emergency and conflict-affected setting needs.

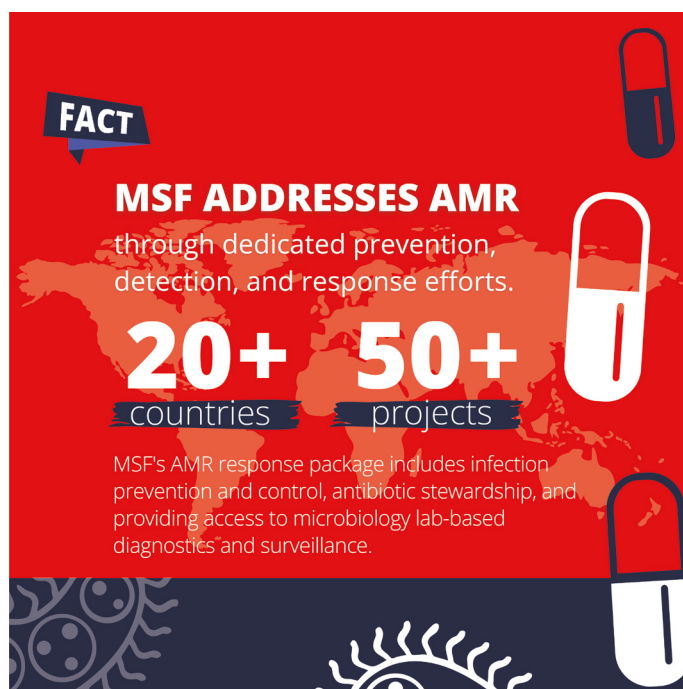


FIGURE 2: MSF ADDRESSES AMR IN HUMANITARIAN SETTINGS

## IV

**A CALL FOR COLLECTIVE ACTION**

Global initiatives like the Independent Panel for Evidence and Action (IPEA), the update of the Global Action Plan on AMR, and the upcoming High-level Ministerial Conference in Nigeria can accelerate progress, but fragmented responses and funding cuts threaten these efforts. What's needed is strategic international collaboration and strengthening vulnerable healthcare systems rather than fortifying borders.

” DR RUPA KANAPATHIPILLAI, MSF AMR STEWARDSHIP LEAD

In conflict-affected and humanitarian settings, antimicrobials alone are rarely the best treatment. Effective care requires surgery, wound management, aseptic technique, skilled nursing, and, where possible, adequate nutritional support.

” **We must place our patients and our communities at the centre of how we approach AMR and conflict in humanitarian crisis. [We must make] sure that their voices are heard, because without them we will not understand how best to support them in their often long, traumatic, and arduous journeys.**

DR AULA ABBARA, HONORARY SENIOR CLINICAL LECTURER AND CONSULTANT IN INFECTIOUS DISEASES AT THE IMPERIAL COLLEGE LONDON

For interventions to succeed, they must be patient-centred and tailored to the unique needs of individuals and communities in crisis. Addressing AMR demands coordinated actions among governments, humanitarian stakeholders, international organisations, academia, civil society, and resource partners. Delivering targeted and high-quality care is essential not only to protect people living in fragile, conflict-affected and vulnerable settings but also to preserve the effectiveness of antimicrobials globally. Failure to act now risks a future where minor infections become life-threatening for everyone.

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