

Addressing antimicrobial resistance in fragile and conflict-affected situations

Policy brief



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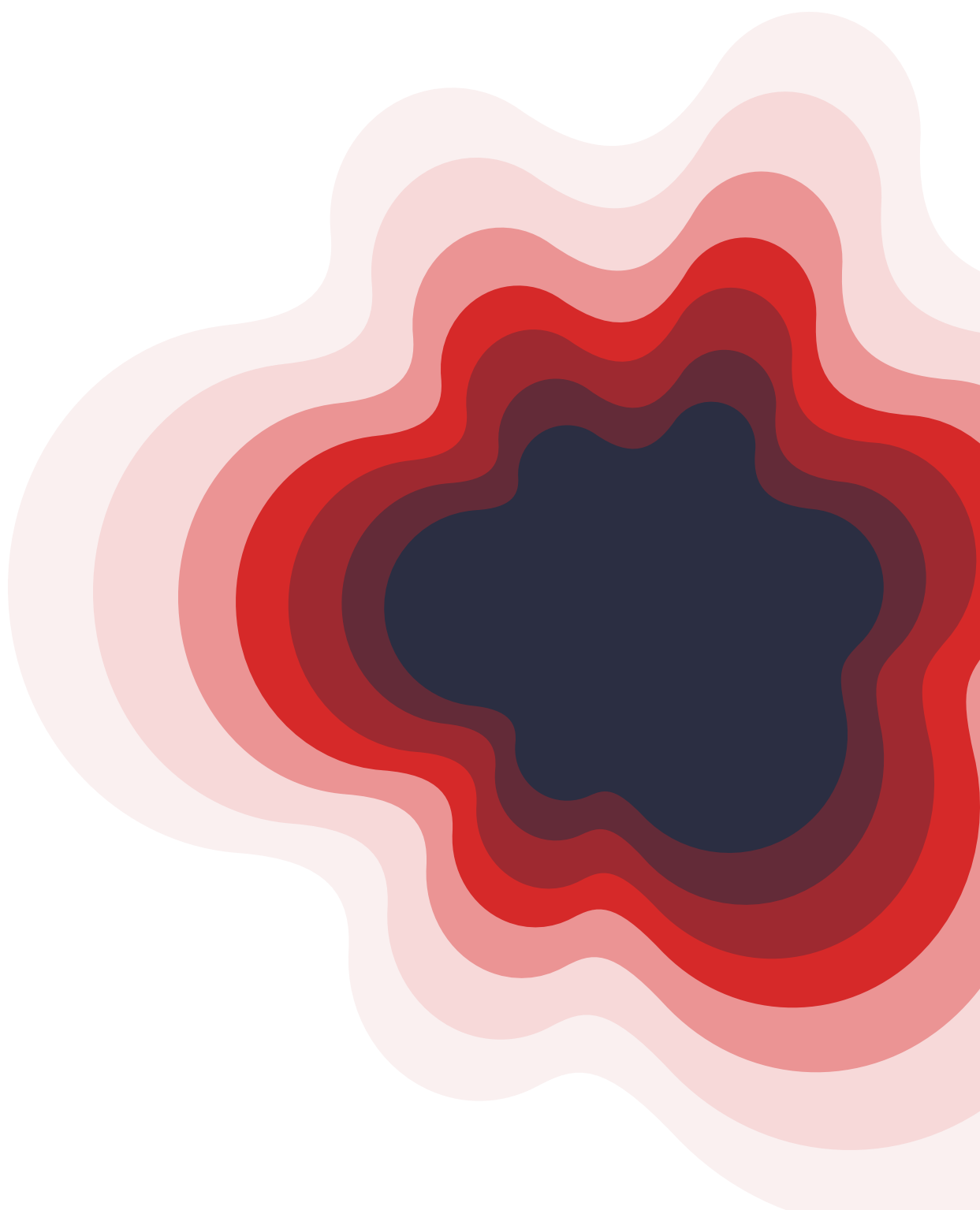
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Executive summary

Antimicrobial resistance (AMR) poses a growing threat to global health security, with an estimated 8.22 million deaths predicted to be associated with bacterial AMR globally in 2050, including 1.91 million attributable deaths. It is estimated that in 2021, in the WHO Eastern Mediterranean Region, there were 380 000 deaths associated with bacterial AMR, including 92 800 attributable deaths. The impact of AMR is particularly high in fragile and conflict-affected situations (FCS) where health systems are severely compromised. This policy brief highlights the urgent need to integrate AMR mitigation strategies into humanitarian and development responses in FCS, addressing the unique challenges posed by disrupted health infrastructure, population displacement and limited access to diagnostics, treatment, infection prevention and control (IPC), and water, sanitation and hygiene (WASH).

This policy brief is grounded in the four pillars of the people-centred approach to AMR, as endorsed by the Member States of the World Health Organization (WHO) through resolution WHA77.6 at the Seventy-seventh World Health Assembly in 2024: (1) prevention of infections; (2) access to essential health services; (3) timely, accurate diagnosis; and (4) appropriate, quality-assured treatment. Building on this framework – and informed by expert consultations and field experiences from the WHO Eastern Mediterranean Region – the brief outlines interventions across seven domains: infection prevention, diagnosis, treatment, surveillance, community engagement, primary and mobile care, and the wider determinants of health.

It recommends embedding AMR activities within broader health system strengthening efforts and emergency preparedness and response frameworks and plans, while strategically leveraging global financing mechanisms and integrated approaches across the humanitarian-development-peace continuum. This includes integrating AMR interventions in humanitarian response efforts, long-term development plans, community engagement and peacebuilding initiatives to ensure continuity and resilience in fragile and conflict-affected settings. The brief also calls for increased advocacy, operational guidance tailored to FCS contexts and a strengthened research agenda to support effective AMR mitigation in the most vulnerable environments.

This policy brief is for health sector actors and stakeholders such as ministries of health, United Nations agencies, health and WASH cluster implementing partners and other humanitarian and development actors, including donors and both international and local nongovernmental organizations. While the primary audience is governments, the need to collaborate with authorities in non-government controlled areas is acknowledged, foregrounding the role of the “health cluster”, which brings together different actors in leveraging their comparative advantages.

It was developed through a desk review of the literature, expert interviews and stakeholder consultations.

Introduction

Antimicrobial resistance (AMR) is among the top global health challenges. Globally, an estimated 4.71 million deaths were associated with bacterial AMR in 2021, including 1.14 million deaths directly attributable to it. This is projected to reach 8.22 million associated deaths and 1.91 million attributable deaths in 2050 (1). In the WHO Eastern Mediterranean Region, there were 380 000 deaths associated with bacterial AMR, including 92 800 attributable deaths, in 2021 and this is projected to reach 752 000 associated and 187 000 attributable deaths by 2050 (1). In 2023, bacterial resistance was most frequent in the Eastern Mediterranean and South-East Asian Regions among all WHO regions, with almost 1 in 3 laboratory-confirmed infections caused by resistant bacteria (2). The situation is of particular concern in fragile and conflict-affected situations (FCS), especially with the increasing number of armed conflicts that fuel the development and spread of AMR (3–6). Health systems in FCS are often weak, disrupted and often overwhelmed with casualties, and are therefore unable to adequately address the additional impact of AMR (4).

Generic, normative guidance is often insufficient in FCS, where health systems face unique constraints and vulnerabilities. Addressing AMR in these contexts requires tailored strategies that reflect the complex realities on the ground (5, 6). Despite growing recognition of AMR as a threat in FCS, implementation of prevention and mitigation activities remains limited – largely due to competing priorities. This policy brief offers action-oriented guidance for integrating AMR mitigation across health programmes, based on a people-centred framework that is responsive to the realities of fragile settings.

Fragile and conflict-affected situations

There is no universally accepted global definition for FCS. In this policy brief, we adopt the World Bank's definition, where conflict-affected countries are identified based on a threshold number of conflict-related deaths relative to population (7). Fragile settings exhibit systemic conditions of extremely low institutional and governance capacity, which significantly impede the state's ability to function effectively, maintain peace and foster economic and social development (8). By 2030, it is estimated that 59% of the world's extreme poor will live in countries affected by fragility, conflict and violence (9). As of August 2025, 307.8 million people worldwide were in need of humanitarian assistance and protection across 73 countries (10).

In WHO's Eastern Mediterranean Region, the World Bank classifies nine countries as FCS (6). As of September 2025, WHO was responding to 25 graded emergencies in the Region, including 18 at the highest level of severity across 10 complex humanitarian crises. In 2023, around 55% of the world's refugees and 33.7 million people who had been forcibly displaced were from the Region (11), and seven countries in the Region were among the 10 countries ranked lowest according to the World Bank's Political Stability and Absence of Violence/Terrorism index (12). In March 2025, an estimated 110 million people needed urgent assistance, accounting for one third of the global humanitarian burden (13).

Health care provision in FCS

Health care provision in FCS faces numerous challenges, including insecurity, overload, political instability and fragmented governance. Limited capacity to provide health services outside urban areas, ineffective referral systems for critically ill patients and a lack of infrastructure, including electricity, human resources, equipment, medicines, clean water and sanitation, further exacerbate the situation (14, 15). In some FCS, much of the health care infrastructure has been destroyed or severely compromised due to war or neglect. Additionally, inadequate capacity-building mechanisms and coordination, oversight and monitoring of health services contribute to the challenges. Weak processes for developing and implementing national health policies, non-operational health information systems and insufficient public finance management capacity further hinder effective health care delivery in FCS (16).



Increased risk of AMR in FCS

Conflict and large-scale population displacement pose significant risks for infections associated with AMR. Disruption to the delivery of essential health services, including vaccination, poor regulatory systems allowing substandard and falsified medicines, eroded microbiology laboratory capacities, and the unavailability of antibiotics because of supply chain issues resulting from interruption, sanctions and the targeting of pharmaceutical factories, are some of the direct factors (17–20).

Indirect factors and wider determinants of AMR include lack of water, sanitation and hygiene (WASH) services, inadequate sewage systems, environmental contamination from the toxic remnants of war, the destruction of infrastructure, unregulated private and less-than-fully qualified service providers, and disruptions to shelter and livelihoods, as well as food and water shortages, which lead to high rates of malnutrition predisposing populations to infection (21, 22). If not appropriately managed, population displacement and migration to neighbouring countries (23) increases the risk of cross-border spread of infectious diseases, including AMR infections.

One of the leading causes of death from traumatic injuries in FCS is infection with multidrug-resistant pathogens, often resulting from inadequate care during conflicts and disasters (3, 5). Several factors contribute to this problem, including overwhelmed medical personnel, limited resources, lack of access to clean water and appropriate antimicrobials, poor implementation of IPC measures, and challenges in environmental cleaning and the proper reprocessing of medical instruments. Additionally, the persistence of heavy metals from weapons can accelerate the development and spread of AMR (24).

The lack of IPC measures in overcrowded health care facilities leads to health care associated infections and the subsequent spread of AMR within communities affected by malnutrition and chronic conditions (17, 20). This is compounded by an access–excess paradox: while many displaced populations face no access to essential antimicrobials, others are exposed to overuse and misuse – through informal markets, poor-quality or counterfeit drugs, and precautionary “just-in-case” prescribing in overstretched humanitarian clinics. Both extremes accelerate the spread of resistance and highlight the urgent need for stronger, better regulated health systems (4).

Difficulties in addressing AMR in FCS

The prevailing approach to combating AMR often overlooks the unique challenges faced in FCS, rendering existing strategies ineffective in these contexts. While AMR is acknowledged as a threat in FCS, there has been little focus on implementing adequate AMR prevention and mitigation activities (14). This is largely due to competing priorities, such as responding to communicable disease outbreaks, addressing malnutrition and food security, and managing noncommunicable diseases, as well as the limited evidence available on what works in FCS. Additionally, humanitarian and development efforts in FCS situations often prioritize vertical, short-term health interventions, without considering structural determinants such as social, economic and environmental factors (14). Furthermore, currently recommended AMR mitigation strategies often overlook the political and economic context of FCS, complicating efforts to address AMR effectively.



Factors that support AMR mitigation activities in FCS

- Several partners deliver health services within the health and WASH cluster frameworks, which means more funding opportunities and technical support.
- Anti-infectives and IPC supplies form a critical component of the Interagency Emergency Health Kits (25).
- Aligning with the humanitarian-development-peace continuum improves the effectiveness and efficiency of service delivery (26).
- The inclusion of AMR in the International Health Regulations (2005) and Joint External Evaluations provides a framework for a national preparedness and response within a One Health approach.
- AMR programmes are eligible for financing from global mechanisms, such as the Global Fund to Fight AIDS, Tuberculosis and Malaria and the Pandemic Fund, which prioritize FCS.

Key interventions

Table 1 provides an overview of the key interventions to address AMR in FCS across the following seven domains: infection prevention, diagnosis, treatment, surveillance, community engagement, primary and mobile care, and the wider determinants of health in line with the people-centred approach to AMR (27). The brief addresses all types of FCS, including local, national and regional emergencies, with a particular focus on fragile and post-conflict settings. However, careful consideration must always be given to the unique conditions of each context and emergency.



Table 1. Key interventions across seven key domains for addressing AMR in FCS

Domains	Interventions	Outcomes
Infection prevention	- FCS-specific IPC minimum requirements and simple mobile-applications for monitoring - Integrate safe WASH in health facilities (clean water, waste management, hand hygiene) - Tailored IPC/WASH training and standard operating procedures/assessment tools for health care workers and first responders (28) - Vaccination for epidemic-prone diseases such as cholera, typhoid, meningitis, measles, rotavirus and <i>Haemophilus influenzae</i> type B	- Strengthened IPC preparedness, readiness and response - Improved vaccination coverage - Timely containment of outbreaks - Reduced health care associated infections, including health worker/occupational infections
Diagnosis	- Mobile/field/mini laboratories to conduct culture and antibiotic susceptibility testing (AST) - AI-enabled culture and AST reporting such as AntibioGo mobile app (29) - Piggybacking diagnostics such as nucleic acid amplification tests (NAAT) for tuberculosis	- Increased access to testing - Improved understanding of AMR patterns
Treatment	- Align the antibiotics humanitarian response H3 package with the WHO AWaRe book (30, 31) - Health cluster to align the antibiotics included in emergency kits with the AWaRe book	- Better compliance with treatment guidelines - Reduced inappropriate use of antibiotics
Surveillance	- Include multidrug-resistant organisms and health care associated infections in the Early Warning, Alert and Response System (EWARS) - Establish AMR sentinel surveillance sites - Monitor antimicrobial use in facilities using simple mobile apps-based monitoring tools	- Improved understanding of AMR epidemiology, and early detection of outbreaks or emerging resistance - Improved use of antibiotics
Community engagement	- Training for community and primary health workers and first responders in: - vaccinations, hygiene, sanitation, wound care, hand hygiene and other IPC measures - appropriate use of antimicrobials and microbial diagnostics - avoiding self-medication, and adherence to dosage and duration - Make local voices matter: affected communities and frontline providers must be part of the solution, their insights help tailor and contextualize the interventions and make responses more sustainable	- Improved information, education, and behavioural change communications - Improved community infection prevention practices/decreased community acquired infections - Increased AMR-related competencies among primary health workers - Stronger community trust - Context-sensitive interventions
Primary and mobile care	- Integrate a minimum package of activities on IPC/WASH and optimal antimicrobial use into primary health care and mobile humanitarian health services - Improve access to and use of formal care: ensure primary health care services for both host communities and displaced populations as part of a continuum of care during humanitarian responses - Build quality and inclusive services to restore both use of and trust in formal care	- Improved service delivery in primary health care - Increased use of formal care and more rational antimicrobial practices
Wider health determinants	- Multisectoral measures to address underlying drivers: WASH, food security, safe housing, waste management and occupational/environmental safety - Ensure both high-level and local commitment to address the causes and consequences of armed conflict and displacement through contextualised, multisectoral solutions adapted to different conflict stages and impacts - Coordinate One Health approaches linking human, animal and environmental health responses	- Mitigation of AMR spread through improved living and environmental conditions - Healthier populations – both displaced groups and host communities - More sustainable and equitable AMR responses, rooted in structural solutions
Enablers: stable supply chain, quality-assured medicines, predictable financing including for the humanitarian WASH road map 2020–2025 (32)		
Risks: destroyed infrastructure, disrupted electricity and water supply, lack of technical expertise due to death, displacement or migration of health care personnel, safety and security challenges, political sanctions		

Recommended actions for different stakeholders addressing AMR in FCS

- **Civil society:** Increase advocacy for AMR as an imminent threat in FCS to national authorities, United Nations agencies and other humanitarian partners, multilateral and bilateral funding agencies, philanthropies, professional organizations, the private sector, academia and nongovernmental organizations; and ensure accountability from the relevant actors.
- **National governments and health cluster partners:** Embed AMR mitigation activities across health emergency, universal health coverage, primary care, health systems and other relevant programmes. AMR activities should be incorporated into national health system strengthening plans and emergency preparedness and response plans, and funded through domestic budgets and engagement with development partners such as regional development banks, the World Bank Group and the Global Fund to Fight AIDS, Tuberculosis and Malaria.
- **United Nations agencies, humanitarian actors and donors:** Integrate AMR interventions into health emergency preparedness and response activities and humanitarian relief operations and include AMR in all emergency funding calls.
- **WHO, academics and donors:** Advance the research agenda on AMR, with a particular focus on implementation and operational research in humanitarian settings.
- **WHO and health partners:** Develop tailored IPC guidelines and monitoring tools, antibiotic use guidelines, diagnostic packages, simple mobile applications for monitoring, and training modules for health care workers and first responders.

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