



# Situation Analysis and Recommendations: Antibiotic Use and Resistance in Mozambique

## Introduction

The World Economic Forum counts antibiotic resistance among the top three threats to the world order and the World Health Organization warns that we may be headed toward a post-antibiotic era where simple infections kill for lack of effective treatment. Yet antibiotic resistance barely makes it onto the health agenda in countries overburdened with serious infectious diseases and a growing epidemic of noncommunicable diseases.

The Global Antibiotic Resistance Partnership (GARP)-Mozambique was established to encourage the development of evidence-based recommendations by a working group of national experts to respond to the challenge of antibiotic resistance.

The GARP vision is of a permanent presence and knowledge base about antibiotic use, quality and resistance rooted in Mozambique and connected with global partners. GARP-Mozambique can be the catalyst for relaying antibiotic resistance information to an expanding constituency, with collaboration among all sectors for the public good.

As a first step, the GARP-Mozambique working group has completed a situation analysis of antibiotic use and resistance, assembling all available evidence that bears on the situation. This brief summarizes key findings and preliminary recommendations that will set the stage for consultation with a wide range of parties to identify and begin work on the highest priorities.





## Key Findings


- Limited information is available on resistance rates of common pathogens to first-line antibiotics, but what research does exist has found high resistance to many drugs. For instance, resistance is high to the first-line antibiotics for the main causes of bacterial pneumonia and sepsis, which kill more children in Mozambique than any other disease except malaria.
  - In one study, 89 percent of all *Streptococcus pneumoniae* isolates were resistant to cotrimoxazole.
  - Steep increases in resistance to chloramphenicol and ampicillin, the first-line antibiotics for *Haemophilus influenzae*, were recorded, reaching 63 percent and 42 percent, respectively, in recent studies.
- Access to formal health care is limited: Only half of the population currently has access to a primary health care facility and medicines and healthcare staff are often in short supply in the facilities that do exist.
- Despite a significant reduction in the death rate of children less than 5 years old, the rate is still higher than the global average: 95 versus 58 per 1,000 live births. One-quarter of all children do not receive basic childhood immunizations.
- Healthcare providers sell antibiotics for profit outside the formal healthcare sector, and consumers frequently purchase antibiotics without a prescription.
- Regulations for antibiotic use in animals are limited and weakly enforced. Antibiotics are freely available for sale directly to farmers without a prescription, and farmers use them routinely for disease prevention and growth promotion.

Limiting resistance and maintaining effectiveness of antibiotics requires a balance between eliminating as much inappropriate antibiotic use as possible while ensuring access for those who need antibiotic treatment.

## Preliminary Recommendations

Based on the findings of this analysis and the urgent global need to confront the threat of antibiotic resistance, GARP-Mozambique recommends a goal of **developing and implementing a national strategic plan for antibiotic resistance, preserving the effectiveness of antibiotics while ensuring their effective use against disease.**

Such a plan requires the collaboration of government and the private sector and many parts of the human and veterinary health systems. Careful development will take several years. GARP-Mozambique can help catalyze the process by filling some information gaps and conducting some necessary studies. At the same time,



the working group will make this situation analysis available to all involved sectors and organizations and expand the constituency for developing a national plan. Six strategies that should form the backbone of a national strategic plan are to:

### **1. Reduce the need for antibiotics through public health measures**

The most attractive strategy is to reduce the need for antibiotics by reducing the burden of infectious diseases requiring antibiotics. This can be achieved by improving vaccination coverage and access to clean water and sewerage systems. These activities have many benefits to human health and well-being besides reducing antibiotic resistance. Controlling antibiotic resistance is a side benefit of these public health measures, whose primary purpose is general health improvement. GARP-Mozambique supports them, but they have larger constituencies to move them forward.

### **2. Improve hospital infection control and antibiotic stewardship**

Infections, including multi-drug resistant infections, may spread from patient to patient within hospitals, often through the doctors and nurses engaged in their treatment. The spread of infections can be reduced through improved hygiene, particularly hand washing with soap or using alcohol disinfectant between patients. Other interventions to prevent and control infections in hospitals include introducing antibiotic stewardship programs and implementing surveillance of resistant and hospital-acquired infections to guide clinical decisions and policymaking.

### **3. Rationalize antibiotic use in the community**

Antibiotics are used all over the world—and Mozambique is no exception—for common coughs, sore throats and fevers, most of which are caused by viruses that are not serious, are self-limited and, most importantly, do not respond to antibiotics. The same is true of uncomplicated acute diarrhea. Healthcare workers prescribe antibiotics to a large proportion of patients with these illnesses, and even without the advice of healthcare workers, people purchase them for themselves or for others, particularly for young children. More information on rates of use and resistance in Mozambican communities is needed. A long-term solution will involve changing behavior within the healthcare system and among the population. In Mozambique, one of the factors that may encourage excessive use of antibiotics is that they are not subsidized by the government, profiting some providers and pharmacies.

### **4. Reduce antibiotic use in agriculture**

In many parts of the world, food animals consume more antibiotics than human beings do, and with less oversight. Where it has been investigated, these animals carry a large load of resistant organisms. In Mozambique, little is known about patterns of antibiotic use in livestock or poultry, or about antibiotic-resistant organisms in animals. Once information is collected, decisions can be made about possible interventions to pursue in this area.

## 5. Educate health professionals, policy makers and the public on sustainable antibiotic use

Though international attention to the issue is growing, antibiotic resistance is still not widely recognized or understood as a serious threat to human health. The education of healthcare professionals, policy makers and the public is an important component of promoting sustainable antibiotic use.

## 6. Ensure political commitment to meet the threat of antibiotic resistance

GARP-Mozambique is the first step in building political commitment and cooperation for combating antibiotic resistance, bringing together key stakeholders in government and other sectors to create locally relevant, evidence-based policies.

While increasing access to antibiotics will not lower the resistance burden, maintaining the effectiveness of these drugs will not be valuable unless they are used to save the lives of those who need them. As such, GARP-Mozambique also recommends that access to quality antibiotics is increased, particularly for the poorest and most rural populations, which may be the least likely to live within range of existing healthcare facilities.

## Next Steps

Although all these activities are needed, not all can be started immediately. Resource limitations—including, importantly, the expertise to carefully plan and conduct these activities—will dictate the pace of progress. The immediate goal of GARP-Mozambique is to prioritize activities and to collaborate as widely as possible to involve all sectors and parties with an interest in further developing this agenda and initiating work to preserve the effectiveness of antibiotics in Mozambique and worldwide. Criteria for choosing first priorities are: feasibility, affordability, availability of personnel and potential for high impact.

Immediate priorities include:

- Improving infection control in hospitals,
- Gathering better information on antibiotic use in the community and formulating interventions to rationalize it,
- Gathering data on antibiotic use in animals and initiating discussions about how to control antibiotic use in food animals and,
- Building political support for a national plan.

