

# Global Antibiotic Resistance Partnership-Kenya

## Inaugural Meeting

August 6–7, 2009, Fairview Hotel, Nairobi

### Introduction

The inaugural meeting of the Global Antibiotic Resistance Partnership (GARP)-Kenya took place on August 6–7, 2009 in Nairobi. The two-day workshop brought together more than 40 microbiologists, government officials, health researchers, and academics from both the human and veterinary communities, and representatives of international and nongovernmental organizations. GARP-Kenya is a collaborative project of the Kenya Medical Research Institute (KEMRI) and Resources for the Future (RFF), a U.S.-based nonprofit and nonpartisan environmental and public health research organization. GARP, a project of RFF with funding from the Bill & Melinda Gates Foundation, is a worldwide effort to address the challenge of antibiotic resistance. In the current, initial phase, actionable policy proposals are under development in five low- and middle-income countries: China, India, Kenya, South Africa and Vietnam.

During the first gathering of its kind in Kenya, experts presented data on trends in resistance of important pathogens to a variety of antibiotics in humans and animals. Representatives of the Centers for Disease Control-Kenya, Ministry of Agriculture, and other public institutions discussed the strengths and weaknesses of the regulatory environment for the availability and use of antibiotics. Key information gaps were identified that could be the focus of further research. The need was clear for locally relevant interventions to reduce the need for antibiotics by preventing disease and to align incentives to promote appropriate antibiotic use.

Ramanan Laxminarayan, RFF Senior Fellow and GARP Principal Investigator, meeting chair Keith Klugman (who also chairs GARP's International Advisory Group), and the GARP-Kenya National Working Group chair, Sam Kariuki, highlighted approaches and relevant questions regarding antibiotic resistance as a public health and policy issue. Kariuki directs the Enterics Microbiology Laboratory at KEMRI, and is an active investigator of antibiotic resistance trends in Kenya.

Central points from the presentations include:

- *High levels of resistance exist to common antibiotics.* As reported by the Wellcome Trust Netspear project and by researchers at several hospitals, diarrheal and invasive bacteria are acquiring resistance to most common antibiotics. For example, upwards of 60–70 percent of *Streptococcus pneumoniae* isolates from Uganda, Tanzania, and Kenya are resistant to cotrimoxazole. *Vibrio cholerae* and *Salmonella* Typhi are largely resistant to first- and second-line drugs, such as ampicillin, chloramphenicol, tetracycline, streptomycin, and cotrimoxazole. All *Staphylococcus* and *E. coli* strains from a hospital in western Kenya were resistant to penicillin, and most were resistant to cotrimoxazole and methicillin.
- *Hospital infection control measures are hindered by inadequate supplies and surveillance.* Hospital infection control efforts include the development of standard guidelines, staff education, and the dedication of human resources to combat the spread of disease. Limited resources and supply constraints, however, blunt the impacts of these activities. Kenyatta National Hospital, in partnership with the Centers for Disease Control-Kenya, intends to launch a

study on the prevalence and spread of hospital-acquired infections and to assess various interventions likely to reduce transmission.

- *Major food products test negative for residue of antimicrobials of concern.* Although tetracyclines and sulphonamides are used for prophylaxis and treatment of food-producing animals, the Department of Veterinary Services found low levels or no antibiotic residues in goat, pork, and bovine meat products. However, resource constraints mean that few products are tested and veterinary researchers acknowledge that food safety control systems are inadequate. Concern remains over the potential for livestock to transfer, or serve as a reservoir of, antibiotic resistance genes in bacteria such as *E. coli*, *Campylobacter* and *Salmonella*.
- *Vaccination and short duration of treatment show potential as interventions.* Vaccination efforts against leading causes of pneumonia, *Haemophilus influenzae* type B (HiB), and *S. pneumoniae*, have led to a reduction in antibiotic demand in trial countries. Vaccinating against rotavirus and influenza may also reduce antibiotic use. In Kenya, routine HiB vaccination began in 2002 and *S. pneumoniae* vaccination is scheduled to begin in 2010. No plans have been made, however, to incorporate rotavirus and influenza immunizations into public health programs. RFF researchers reported on the potential of using epidemiological modeling to reduce the recommended duration of treatment with antibiotics as another method of lowering demand.

The meeting concluded with an open discussion, during which conference speakers and attendees aired concerns related to knowledge and capacity gaps, issues in collecting and disseminating information, and methods to implement and evaluate proposed solutions. Participants noted the gap between political realities and ideal solutions, the lack of priority given antibiotic resistance, and the limited resources that have been available to address resistance issues. They emphasized the need to approach the issue in ways that speak to the concerns of decisionmakers.

### **Next Steps**

Meeting contributions are expected to provide a foundation for continuing national and global dialogue on the management of antibiotics as a public resource. Over the next two years, the GARP-Kenya National Working Group, RFF, and partners will investigate factors driving resistance in Kenya. As a first step, a situation analysis that brings together current knowledge is being prepared. Also commencing is a program of policy research that will explore incentives facing consumers and suppliers of antibiotics, as well as the health and economic burden caused by bacterial and drug-resistant infections. The results of these activities will enable the development of national policy strategies, with consultation among country stakeholders. The next meeting of the National Working Group will be held in November.

For more information on this initiative, please contact:

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