



Book Review

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Antimicrobial resistance: global report on surveillance 2014

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Most antimicrobials were discovered in the 20th century; they have had a tremendous effect on mortality and morbidity due to infectious diseases. With the increasing problem of resistance to older antimicrobials, and the delay in the development of new antibiotics, many experts are concerned about a return to a “pre-antibiotic” era. Antimicrobial resistance (AMR) and antibacterial resistance (ABR) are fast becoming a major public health problem. The World Health Organization (WHO) and its member countries recently released their first report on the magnitude of AMR and the current status of surveillance.

This report on global antimicrobial resistance highlights growing concerns about widespread resistance and describes how common disease-causing bacteria are now resistant to a wide variety of antibiotics. The report has focused media attention towards this important and growing problem.

The foreword to the report by Dr Keiji Fukuda, the WHO’s assistant director general, Health Security, stresses the urgent need for action to tackle the AMR problem. The report summary mentions high rates of resistance among bacteria causing common infections in various WHO regions and highlights significant gaps in surveillance. For example, increasing levels of resistance have been noted in TB, malaria, and HIV/AIDs, which are diseases of major public health concern. The report details resistance rates among selected bacteria in various WHO regions. Among the bacteria causing infections in both the community and in hospitals, the ones studied were *Escherichia coli*, *Klebsiella pneumoniae*, and *Staphylococcus aureus*. Among the bacteria mainly causing infection in the community, the ones studied were

Streptococcus pneumoniae, nontyphoidal salmonella, *Shigella* species, and *Neisseria gonorrhoeae*.

The report is divided into six sections with a detailed Annex and Appendices. Section 1 of the report focuses on AMR surveillance mechanisms in various WHO regions. Many countries in Africa and the Middle East, and non-European Union countries in Europe lack national AMR surveillance mechanisms and data. Section 2 focuses on AMR/ABR in selected bacteria of international concern, including: resistance to third-generation cephalosporins among *E. coli* and *K. pneumoniae*; resistance to beta-lactams among *S. aureus*; and fluoroquinolone resistance among *Shigella* species. Section 3 deals with the economic consequences of AMR. Resistance has been known to be associated with increased cost and increased duration of treatment, but there is a dearth of studies dealing with the economic consequences of AMR. Section 4 deals with AMR in disease-specific programs. I was surprised by the spread of extensively drug-resistant TB (XDR-TB) around the globe.

In the WHO African region 80 per cent of *S. aureus* has been reported to be resistant to methicillin, while in the Americas the percentage may be close to 90 per cent. The Eastern Mediterranean and European regions show high incidence of AMR, while in the South East Asian region there are significant problems of *E. coli* resistance to third-generation cephalosporins and fluoroquinolones and of *S. aureus* resistance to methicillin.

The annexes deal with methods for collecting data on surveillance and antibacterial resistance, reports on resistance to specific antibiotics or antibiotic groups among specific bacteria according to WHO regions or countries (which comprises a major portion of the report). The report mentions 320 publications dealing with AMR, which would be of interest to researchers and others involved. The brief description of studies in a tabular form is succinct. Annex 3 deals with the burden of AMR/ABR through a systematic review of published evidence and is important given the paucity of pharmaco-economic studies in this subject area. The appendices mention the questionnaires used for data collection, WHO tools to facilitate surveillance of ABR, WHO publications dealing



with AMR, ICD10 codes for AMR, and international antibacterial resistance surveillance networks.

The terms AMR and ABR are used interchangeably in this report, which can sometimes be confusing. The book has been well produced and provides up-to-date information about the serious threat of ABR around the world.

About the book: World Health Organization Antimicrobial resistance: Global report on surveillance 2014. ISBN 978 92 4 156474 8. The report can be downloaded for free from http://apps.who.int/iris/bitstream/10665/112642/1/9789241564748_eng.pdf
