

Editorial

ANTIMICROBIAL RESISTANCE

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Antimicrobial resistance (AMR) has been identified by the World Health Organization as a global health concern, threatening to undo decades of advances in our ability to treat disease.¹ This is a serious issue as AMR contributes to increased patient morbidity and mortality, the complexity and duration of treatments and hospital stay, and results in substantial increases to health care system costs and financial burden to the community. The prevalence of AMR, including resistance to clinically important antibiotics, is increasing both in Australia and internationally. Globalisation increases the vulnerability of Australians to disease. Today, infectious diseases are travelling faster and further than ever before as a result of international travel and medical tourism.

AMR spans both animal and human health and as such requires a nationally coordinated, whole-of-system One Health response. Australia is committed to preventing the emergence and containing the spread of AMR. With this in mind, the Australian Antimicrobial Resistance Prevention and Containment (AMRPC) Steering Group was established in early 2013 to provide high-level governance and leadership on AMR in Australia. The AMRPC Steering Group is jointly chaired by the Secretaries of the Commonwealth Departments of Health and Agriculture, with the Commonwealth Chief Medical Officer and Commonwealth Chief Veterinary Officer also being members. The Steering Group is overseeing the development and implementation of a National AMR Strategy, which will coordinate Australia's efforts across human and animal health to reduce, monitor and respond to the threat of AMR.

An important first step for AMR intervention, which has also been identified by the Steering Group as a key priority area, is establishing an integrated national surveillance system for antibiotic resistance and antibiotic usage across human and animal health, food and agricultural sectors. Currently, there are a number of AMR surveillance systems that are active in Australia, including the Australian Group for Antimicrobial Resistance (AGAR), that provide data on AMR patterns for a number of key pathogens, and the National Antimicrobial Utilisation Surveillance Program, that reports on trends in antimicrobial usage in Australian hospitals. The Australian Commission

on Quality and Safety in Health Care (ACSQHC) also manages a number of initiatives to further expand and support improvements in the quality of AMR monitoring and surveillance data, including the National Cumulative Antibiogram, standardisation of laboratory reporting, the Second National Survey of *Clostridium difficile* Infection and the Central line Associated Bloodstream Infection Prevention Project.

The AMR Standing Committee (AMRSC) was established under the Australian Health Protection Principal Committee (AHPPC) in 2012. This committee advises the AHPPC on matters relating to AMR; provides expert advice and assistance on issues relating to AMR; and recommends national priorities relating to AMR for action. In 2013, AMRSC completed a report detailing the current surveillance activities for antibiotic use and resistance in human health and recommended priorities for future action. This report provides an excellent overview of the current situation and will be invaluable in informing the development of a comprehensive national surveillance system. The AHPPC has endorsed the report as has the Australian Health Ministers' Advisory Council.

This issue of *Communicable Diseases Intelligence* contains annual reports of various surveillance systems: AGAR; the Australian Gonococcal Surveillance Programme; and the Australian Meningococcal Surveillance Programme, which provide data on the prevalence of resistance to key antibiotics in major pathogens in Australia. In their report, Coombs et al have referred to the importance of such data for informing infection control practices, antibiotic prescribing policies and drug regulatory matters, illustrating this with data that highlight an increasing trend of vancomycin resistance in enterococci.² These annual reports also exemplify the importance of surveillance programs being targeted and species-specific in order to effectively monitor changing antibiotic susceptibility patterns.

The Australian Government has committed \$11.9 million over 3 years, starting in 2013–14, for the development of a National AMR Strategy. This includes funding for the ACSQHC to provide the foundations for a national AMR and antibiotic usage surveillance system.

While effective surveillance is a vital component of tackling AMR, it is just one part of the broader multifaceted approach that is required. The AMRPC Steering Group has agreed that in addition to surveillance, key activities under the National AMR Strategy will include the provision of strong central leadership and governance nationally and internationally; implementation of infection prevention and control activities to reduce the spread of infection in general and of resistant infections in particular; development of and streamlined regulatory mechanisms across all sectors; regular engagement with international organisations; effectively communication AMR issues (including national education initiatives, active engagement of key stakeholders and partnerships with governments, non-government organisations, professional societies and international agencies); and strategic AMR related research.

AMR is not confined to human health, but also extends across animal health and agriculture. The development of resistance by bacteria is an unavoidable consequence of bacterial evolution; but greater use of antibiotics in humans, livestock and the environment present greater opportunities for bacteria to become resistant. Due to the cross-sectoral nature of AMR, which impacts on industry, educators, health and veterinary professionals, and the community, it is vital to maintain a One Health approach: a coordinated, collaborative, multidisciplinary and cross-sectoral approach in the development of health strategies for people, animals and the environment.³ This approach allows for an interdisciplinary dialogue between doctors, veterinarians, farmers, industry and the community, and ensures a consistent approach is undertaken to address health, science, social, environmental and economic issues related to AMR.

In July 2013, the Australian One Health Antimicrobial Resistance Colloquium was hosted by the AMRPC Steering Group. The forum assembled over 60 medical, veterinary and agricultural professionals and policy makers to collaboratively exchange views about AMR and to provide advice on One Health priorities and strategies to address AMR in Australia. Participants discussed key issues to inform development of the National AMR Strategy, with particular reference to surveillance requirements, regulatory reform and the most significant zoonotic AMR risks. The

AMRPC Steering Group will continue to consult with stakeholders during the development of the National AMR Strategy. The Colloquium was the first step for establishing an ongoing dialogue.

Forums such as the One Health Colloquium highlight the commitment and cooperation of all stakeholders in tackling the threat of AMR in Australia. However, due to the globalised nature of our world, any efforts by Australia to combat the spread of resistant organisms will be of limited value if such efforts are not emulated internationally. Therefore, in addition to combatting AMR on a national scale, Australia is actively engaging in key international collaborations to elevate the issue of AMR and drive the need for action by all countries. By working together, this threat can be combatted.

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