

Editorial: A strategy for the surveillance of antimicrobial resistance in Australia

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Antibiotics have underpinned the success of modern infectious disease control for the last half-century. The emergence of resistance in almost all major human pathogenic and many commensal bacteria to antibiotics now presents an enormous challenge to disease control.

Emerging resistance is undermining previously effective treatment regimes worldwide. Gonococcal disease is one example of how emerging resistance has necessitated changes in standard treatment programs from cheap oral antibiotics to more expensive agents. Penicillin, which remains a recommended treatment for gonorrhoea in many countries, is becoming less effective as a treatment due to increasing resistance. In the World Health Organization (WHO) Western Pacific Region in 2000, the proportion of isolates resistant to penicillin varied from region to region, ranging from over 90 per cent in Korea to 7.9 per cent in New Zealand.¹ Of particular concern is the increasing number of gonococcal isolates showing an altered susceptibility to the third-generation cephalosporins. Third-generation cephalosporins have an increasing importance in the treatment of gonococcal disease as the incidence of resistance to penicillins and quinolones increases. As demonstrated in the WHO Western Pacific Gonococcal Antimicrobial Surveillance Programme report in this issue of *Communicable Diseases Intelligence*, *Neisseria gonorrhoeae* isolates with an altered susceptibility to third generation cephalosporins continue to be reported from several countries in the region, including Australia.²

The potential economic costs of antimicrobial resistance (AMR) to the healthcare system are substantial, given that resistance necessitates the use of more expensive antibiotics in treatment, the administration of multiple courses of antibiotics, and increases in the length of hospital stay. In the United States of America, the health care costs associated with the treatment of infections caused by antibiotic resistant bacteria have been estimated between 4 and 5 billion dollars annually.³ The actual costs of resistance can

be far greater, given that non-resource costs include increased morbidity and mortality, and overall poorer health outcomes.

A link between the use of antimicrobial agents as growth promotants in food-producing animals and the emergence of antimicrobial resistance in Australia was confirmed by the findings of the Joint Expert Advisory Group on Antibiotic Resistance (JETACAR). The JETACAR report made recommendations for the future management of AMR in Australia, the intent of which were strongly supported by the Australian Government.

Several of the recommendations made by the JETACAR identified the need for a national program for the surveillance of antimicrobial resistance in Australia in animals, food and humans. While there are a number of AMR surveillance systems in operation in various jurisdictions in Australia, at the national level, these activities are fragmented and not comprehensive. *The Strategy for AMR Surveillance in Australia* (the Strategy) was developed to coordinate current surveillance activities, to address current gaps in surveillance, and to provide a centralised point for the collation and reporting of national AMR data.

As an initial step, a Central Coordinating Unit (CCU) for the implementation of the Strategy has been established in the Surveillance and Epidemiology Section at the Australian Government Department of Health and Ageing in Canberra. Over the next two years, in consultation with existing AMR surveillance networks, the CCU will collect, collate, evaluate and report on trends in antimicrobial resistance in Australia. Emerging resistance threats, populations and settings of risk and gaps in surveillance will be identified. A plan for an on-going comprehensive national surveillance system for AMR in animals, food and humans will be developed.

Nationally collected surveillance data is essential to improve the understanding and impact of antimicrobial resistance. In Australia, AMR surveillance data will be used to more accurately inform revisions of the *Therapeutic Guidelines: Antibiotic*. Accurate resistance information guides disease control by ensuring that diseases, like gonorrhoea, are treated using antibiotics that are more likely to be effective.

Through a greater understanding of trends in resistance, steps to contain AMR in Australia may be achieved.

Further details about the Strategy can be obtained from:

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An abbreviated version of the Strategy is included in this issue of Communicable Diseases Intelligence. Full copies of the Strategy can be obtained from: <http://www.health.gov.au/pubhlth/strateg/jetacar/reports.htm>

References

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2. World Health Organisation Western Pacific Region Gonococcal Antimicrobial Surveillance Programme. Surveillance of Antimicrobial Resistance in *Neisseria gonorrhoeae* in the WHO Western Pacific Region, 2002. *Commun Dis Intell* 2003;27:488–491.
3. John JF Jr, Fishman NO. Programmatic Role of the infectious diseases physician in controlling antimicrobial costs in the hospital. *Clin Infect Dis* 1997;24:471–485.