Developing a national surveillance system for antimicrobial use and resistance in Australia: AURA

Turnidge J1, Meadley K2, Poole N2, McEwen E4

1 Senior Medical Advisor, Australian Commission on Safety and Quality in Health Care
2 Director, Commonwealth Programs, Australian Commission on Safety and Quality in Health Care
3 Project Manager, Commonwealth Programs, Australian Commission on Safety and Quality in Health Care
4 Senior Project Officer, Commonwealth Programs, Australian Commission on Safety and Quality in Health Care

Surveillance provides evidence for action: it supports clinicians, policy-makers and researchers to prioritise and target investment. A nationally coordinated surveillance system for antimicrobial use (AU) and resistance (AMR) has long been needed to better understand the drivers of AMR in Australia; to review the impact of antimicrobial stewardship and to minimise the impact of AMR on health care delivery.

**OBJECTIVE**

To establish a comprehensive coordinated surveillance system for AU and AMR in Australia in collaboration with existing surveillance programs. The results of surveillance will enable high-quality information and data for practical improvement, health program and policy development, and to support research priorities.

**METHODS**

The Australian Commission on Safety and Quality in Health Care (the Commission) undertook wide-ranging consultation, planning and development activities to review current AU and AMR surveillance programs, identify the requirements of the national surveillance system, and negotiate with a range of stakeholders, experts and key stakeholders to capitalise on their knowledge and expertise to improve the coverage, programs, and quality of existing data collections. The key surveillance programs, coordinated through AURA, are in Box 1.

Each of these programs have been enhanced through the AURA project, resulting in new reports describing the key results of each of the collections. For example, Antimicrobial Use in Australian Hospitals: 2014 Report of the National Antimicrobial Utilisation Surveillance Program, National Antimicrobial Utilisation Surveillance Program Annual Report 2014–2015, the Antimicrobial Prescribing Practice in Australian Hospitals: Results of the 2014 National Antimicrobial Prescribing Survey, the forthcoming Antimicrobial prescribing and infections in Australian residential aged care facilities: results of the 2015 Aged Care National Antimicrobial Prescribing Survey.

**RESULTS**

The Australian Commission on Safety and Quality in Health Care (the Commission) undertook wide-ranging consultation, planning and development activities to review current AU and AMR surveillance programs, identify the requirements of the national surveillance system, and negotiate with a range of stakeholders, to build and improve surveillance infrastructure. The planning phase for the Antimicrobial Use and Resistance Australia (AURA) Surveillance System confirmed the key elements required for a comprehensive approach to surveillance in Australia. The AURA model is one of supporting the enhancement and refinement of existing surveillance programs through a partnership approach, developing new programs where needed, and coordinating and integrating AMR and AU surveillance effort.

**Development of the first national report on antimicrobial use and resistance in Australia**

For the first time in Australia a comprehensive picture of surveillance of AU and AMR is provided through AURA 2016: First Australian Report on AU and AMR in Human Health. AURA 2016 describes rates and patterns for AU in hospitals and the community, as well as provide data on a large number of other antimicrobial classes and uses. The report also provides resistance rates for 13 priority organisms highlights some unique results for Australia such as the comparatively low rate of resistance to fluoroquinolones, reflecting the restricted use of this antimicrobial class in Australia compared with that of many similar countries (Figure 3). The report also highlights variation in Australia compared with other countries, and a notably higher rate of vancomycin resistance in Enterococcus faecium in Australia.

**AURA 2016:** First Australian report on antimicrobial use and resistance in human health will be published in mid-2016 and is the culmination of the first phase of reporting from the AURA Surveillance System. It will be a demonstration of the value of coordinating and consolidating AU and AMR information at a national level.

**CONCLUSIONS**

The foundation of a comprehensive national surveillance system for AU and AMR has been established as part of the AURA Surveillance System. AURA will continue to partner with existing programs and experts to coordinate analysis and use of data from a range of collections to produce integrated surveillance information and reports about the current state of play and trends over time.

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