



February 2018

Information sheet

CARAlert Summary Report: 1 April 2017–30 September 2017

What is CARAlert?

The [CARAlert](#) system was established by the Australian Commission on Safety and Quality in Health Care (the Commission) in March 2016, with funding from the Australian Government Department of Health and the Commission. The system is a core element of the Commission's [AURA \(Antimicrobial Use and Resistance in Australia\) Surveillance System](#). CARAlert collects information about critically resistant bacteria as they are confirmed, allowing trends to be identified and giving states and territories additional information to help containment efforts.

What are critical antimicrobial resistances?

Critical antimicrobial resistances (CARs) are defined as resistance mechanisms, or profiles, known to be a serious threat to the effectiveness of last-line antimicrobial agents. They can result in significant morbidity and mortality in healthcare facilities, and in the community. The CARs reported under CARAlert are listed in Table 1. The CARs were drawn from the list of high-priority organisms and antimicrobials which are the focus of the AURA Surveillance System.

Key findings: 1 April 2017–30 September 2017

For the six month period 1 April 2017 to 30 September 2017:

- There were 742 CAR reports submitted
- Reports were made by 65 participating laboratories nationwide – comprising reports from every state and territory
- Azithromycin non-susceptible *Neisseria gonorrhoeae* were the most frequently reported CAR of all CAR types ($n = 342$)
- The next most frequently reported CAR were carbapenemase-producing Enterobacteriaceae (CPE), either alone ($n = 307$) or in combination with ribosomal methyltransferases (RMT) ($n = 18$)
- Fifty-three per cent of CARs were detected from patients in the community (non-hospital patients or aged care home residents)
- There was an increase in the number of CARs reported compared to the same period last year (742 versus 423); the increase was due almost entirely to increases in azithromycin non-susceptible *N. gonorrhoeae* and an outbreak of OXA-48 producing *Escherichia coli* ST38 that was detected in Queensland, where 80 cases were reported between May 2017 and July 2017

- The majority of CARs continue to be reported from the three most populous states – New South Wales (28%), Victoria (35%) and Queensland (25%)
- CARs were the lowest in the Northern Territory (2), Tasmania (4) and South Australia (5); only 1.5% (11/742) of all CARs were reported from these states and territories.

Areas for action

The frequency of reporting of CPE, and the Queensland outbreak, highlight the importance of the implementation of the Commission’s [Recommendations for the control of carbapenemase-producing Enterobacteriaceae: A guide for acute health facilities](#).

The frequency of reporting of azithromycin non-susceptible *N. gonorrhoeae* has increased over the last two years, initially in South Australia in 2016, then across all jurisdictions in 2017. Azithromycin non-susceptible *N. gonorrhoeae* are now common in Australia and this probably reflects the emergence and spread of resistance clones. This has occurred in the context of significant increase in notifications of *N. gonorrhoeae* by 63% (62 to 101 per 100,000 population) between 2012 and 2016. Azithromycin was added to ceftriaxone as part of a dual treatment strategy to delay the emergence of ceftriaxone non-susceptible *N. gonorrhoeae* in Australia in 2014 and this has coincided with the decline in the proportion of ceftriaxone non-susceptible isolates in Australia.

Other CARs remain at very low levels, providing reassurance that none have become established in Australia.

The Commission continues to monitor records from CARAlert, prepare summary reports and ensure regular discussion with state and territory health departments about trends and potential CAR outbreaks to inform quality improvement initiatives and policies to reduce antimicrobial resistance.

Table 1: List of critical antimicrobial resistances

Species	Critical Resistance
Enterobacteriaceae	Carbapenemase-producing, and/or ribosomal methyltransferase-producing
<i>Enterococcus</i> species	Linezolid non-susceptible
<i>Mycobacterium tuberculosis</i>	Multidrug-resistant – resistant to at least rifampicin and isoniazid
<i>Neisseria gonorrhoeae</i>	Ceftriaxone or azithromycin non-susceptible
<i>Salmonella</i> species	Ceftriaxone non-susceptible
<i>Shigella</i> species	Multidrug-resistant
<i>Staphylococcus aureus</i>	Vancomycin, linezolid or daptomycin non-susceptible
<i>Streptococcus pyogenes</i>	Penicillin reduced susceptibility

More information about CARAlert and [CARAlert updates and reports](#) are published on the Commission’s website. Queries can be forwarded to caralert@safetyandquality.gov.au.