

National Alert System for Critical Antimicrobial Resistances (CARAlert)

Tasmanian CARAlert Protocol – V2



National Alert System for Critical Antimicrobial Resistances (CARAlerts) – Tasmanian CARAlert Protocol V2

Public Health Services

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Background

The Australian Commission on Safety and Quality in Health Care (the Commission) has been engaged by the Australian Government Department of Health to develop a national surveillance program for antimicrobial use (AU) and antimicrobial resistance (AMR) in human health. The Antimicrobial Use and Resistance in Australia (AURA) Surveillance System integrates surveillance of AU and AMR, monitoring trends and measuring the effects of interventions over time. An important element of this project was the establishment of a National Alert System for Critical Antimicrobial Resistances (CARAlert). This alert system allows early recognition and communication of critical antimicrobial resistances (CARs) to all jurisdictions across Australia.

The aim of this protocol is to outline the Tasmanian CARAlert process and to clarify the roles and responsibilities of the key stakeholders within the process. The intended audience for this document includes microbiology laboratory staff, infection prevention and control services, Communicable Diseases Prevention Unit, Tasmanian Infection Prevention and Control Unit and the nominated Tasmanian CARAlert Contacts.

Critical Antimicrobial Resistances (CARs)

Critical antimicrobial resistances (CARs) are defined as ‘resistance mechanisms or profiles known to be a serious threat to last-line antimicrobial agents’¹.

Whilst CARs have occurred in low numbers across Australia, overseas experience has shown that they can result in significant morbidity in healthcare facilities and in the community. Two prominent examples of critical resistance are carbapenemase producing Enterobacterales (CPE) and vancomycin non-susceptible *Staphylococcus aureus*.

The CARs to be reported under CARAlert are listed in Appendix I and are drawn from the List of Priority Organisms and Antimicrobials for targeted surveillance and national reporting as part of the AURA Surveillance System. The list was developed by the Commission, in consultation with members of the AURA Project Reference Group. The CARs will be reviewed and updated regularly in the context of the latest available evidence on critical resistances to emerge in Australia and overseas.

Tasmanian CARAlert Process

A National Alert System for Critical Antimicrobial Resistances (CARAlert): Laboratory Handbook has been developed for the use by originating and confirming microbiology laboratories. Its' purpose is to provide nationally-consistent guidelines to laboratories in contributing to data in relation to confirmed CAR and outlines the responsibilities of stakeholders.

The CARAlert Laboratory Handbook is available at:

<https://www.safetyandquality.gov.au/publications-and-resources/resource-library/caralert-laboratory-handbook>

The operational model for CARAlert is outlined within the Laboratory Handbook but the specific steps required for the CARAlert Process in Tasmania are outlined below:

Step I. Detection of a possible CAR (*Originating Laboratory)

- After the detection of a possible CAR, the originating laboratory sends isolate to confirming laboratory with a completed CARAlert Referral Form which is available at:

<https://www.safetyandquality.gov.au/publications-and-resources/resource-library/caralert-isolate-referral-form>

- Refer the following isolates to the Royal Hobart Hospital (RHH) for possible confirmation:
 - *Candida auris*
 - Carbapenamase-producing *Acinetobacter baumannii* complex
 - Carbapenamse-producing Enterobacterales (CPE)
 - Carbapenemase–producing *Pseudomonas aeruginosa* (non-cystic fibrosis isolates)
 - *Staphylococcus aureus* complex (including *Staphylococcus argenteus*) non-susceptible to linezolid or daptomycin
 - *Streptococcus pyogenes* with reduced penicillin susceptibility
 - Multi-drug resistant *Shigella spp.*
 - *Neisseria gonorrhoeae* – non-susceptible to ceftriaxone or azithromycin resistant (all *N. gonorrhoeae* isolates are should be referred to the RHH as the National Neisseria Network laboratory for Tasmania)
- If the RHH is unable to provide confirmation of the above CARs, then the isolate will be sent to an interstate reference laboratory for confirmation.
- For all other CAR isolates, the confirming laboratory will be an interstate reference laboratory. The confirming laboratory to which the specimen is referred can be determined by the originating laboratory.
- The originating laboratory should report the susceptibility results as found and add a comment that a CAR is suspected and the isolate has been referred for confirmatory testing.

- If the CAR is a notifiable condition, report to the Communicable Diseases Prevention Unit (CDPU) as per standard laboratory practice.
- Where appropriate, hospital infection prevention and control units should be notified in relation to a possible CAR if the patient is a current hospital inpatient.

*In most circumstances, the originating laboratory will be a Tasmanian laboratory. In some circumstances, however, the originating laboratory may be an interstate laboratory e.g. when the specimen has been referred interstate for processing prior to either the identification of the organism or susceptibility testing has been undertaken. In this situation, however, the original laboratory in Tasmania should be responsible to ensure that a CARAlert Referral Form has been submitted and if appropriate, that hospital infection prevention and control units are notified if the patient is a current hospital inpatient.

Step 2 Confirmation of CAR

- Appropriate confirmation tests are undertaken.

Step 3 Notification to CARAlert by confirming laboratory

- The confirming laboratory will notify the originating laboratory and enter data items into the CARAlert web-portal
- The majority of notifications will occur within normal business hours.

Step 4. Notification (Alert) of Appropriate Personnel within Tasmania

- Final laboratory report issued from the local laboratory should include a comment referring to the CAR, such as:
 - *This isolate has been identified to have a critical antimicrobial resistance (CAR). This has been notified to the National Alert System for Critical Antimicrobial Resistances (CARAlert). If further information is required, please contact the Clinical Microbiologist.*
 - Depending on the isolate, additional commentary may also need to be added in relation to the need for appropriate infection control precautions.
- The local laboratory must directly notify:
 - The requesting clinician; if the specimen was processed with a nurse initiated request, the clinician responsible for the patient should be contacted.
 - The hospital infection prevention and control unit if the specimen was taken when the patient was within a healthcare facility (exception: *N. gonorrhoeae*).
 - CDPU via the routine process if the organism is a Notifiable Disease.
 - TB services via the routine process if the organism is *M. tuberculosis*.
- An alert will be sent by email from the National Alert System to the nominated Tasmanian CARAlert contacts as outlined in Table 1. A nominated Tasmanian CARAlert contact will contact both the National CARAlert group and the originating laboratory for additional information if required.

Table 1: Tasmanian CARAlert Nominated Contacts

Name	Position	Telephone	Email address
Annie Wells	Lead contact for CARAlert Process Assistant Director of Nursing, Public Health Services	6166 0603	anne.wells@health.tas.gov.au
Fiona Wilson	Clinical Nurse Consultant, TIPCU	6166 0601	fiona.wilson1@health.tas.gov.au
Dr Tara Anderson	Specialist Medical Advisor, TIPCU	6166 2733	tara.anderson@ths.tas.gov.au
Michelle Harlock	OzFoodNet Epidemiologist	6166 0667	michelle.harlock@health.tas.gov.au

- A determination will be made by the nominated Tasmanian CARAlert contact as to whether any infection prevention and control information provision and/or support is required. This support will be provided through the existing governance framework for infection prevention and control services within Tasmania as outlined in table 2.

Table 2: Infection Prevention and Control Support Providers

Setting	*Infection Prevention and Control Support Provider (business hours)
Hospital Inpatient	Hospital infection and prevention and control unit
Residents of residential aged care or long term care facility	Facility Nurse Unit Manager supported by TIPCU
Community patient	TIPCU

TIPCU can provide additional infection prevention and control advice to the health service as required.

*For notifiable diseases, the Communicable Diseases Prevention Unit (CDPU) will also be involved in accordance with their Standard Operating Procedure.

Clusters or Outbreaks of CARAlert Organisms

If clusters with CARAlert organisms are identified, delegates from CDPU and/or TIPCU will meet with the appropriate stakeholders to ascertain management. TIPCU and CDPU will provide additional support as required. An outbreak management group may need to be formed to facilitate appropriate management of the situation.

CARAlert Reporting Process

1. National CARAlert Report

The ACSQHC will generate CARAlert Reports demonstrating the numbers and types of CARs reported during a defined period. These will be reported regularly to the Jurisdictions and through the Commission's website: <http://www.safetyandquality.gov.au/antimicrobial-use-and-resistance-in-australia/what-is-aura/national-alert-system-for-critical-antimicrobial-resistances-caralert/>

2. Tasmanian CARAlert Report

Tasmanian CARAlert Reports will be provided via the Tasmanian Infection Prevention and Control Advisory Committee (TIPCAC).

Reference

1. National Alert System for Critical Antimicrobial Resistances (CARAlert) resources

<https://www.safetyandquality.gov.au/our-work/antimicrobial-resistance/antimicrobial-use-and-resistance-australia-surveillance-system-aura/national-alert-system-critical-antimicrobial-resistances-caralert>

Appendix I Critical antimicrobial resistances for National Reporting under CARAlert

Species	Critical resistance (as at July2019)
<i>Acinetobacter baumannii</i> complex	Carbapenemase-producing
<i>Candida auris</i>	Regardless of susceptibility profile
Enterobacterales	*Carbapenemase-producing AND/OR Ribosomal methyltransferase-producing AND/OR Transmissible colistin resistance
<i>Enterococcus</i> spp.	Linezolid resistant
* <i>Mycobacterium tuberculosis</i>	Multi-drug resistant (resistant to at least rifampicin and isoniazid)
* <i>Neisseria gonorrhoeae</i>	Ceftriaxone non-susceptible AND/OR Azithromycin non-susceptible
* <i>Salmonella</i> spp.	Ceftriaxone non-susceptible
* <i>Shigella</i> spp.	Multi-drug resistant
<i>Staphylococcus aureus</i> complex (including <i>Staphylococcus argenteus</i>)	Vancomycin, linezolid or daptomycin non-susceptible
<i>Streptococcus pyogenes</i>	Penicillin reduced susceptibility
<i>Pseudomonas aeruginosa</i>	Carbapenemase-producing

*Notifiable Disease in Tasmania