Government of **Western Australia**
Department of **Health**

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Communicable Disease Control Directorate Guideline

Guidelines for using the public hospital micro-alert system in Western Australia

Guideline 0017 v1.3 / January 2026

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Contents

1. Definitions/Acronyms

Abbreviation	Definition
C.auris	*Candida auris*
CPAB	Carbapenemase-producing *Acinetobacter baumanii* complex
CPE	Carbapenemase-producing *Enterobacterales*
CPO	Carbapenemase-producing organism
CPPA	Carbapenemase-producing *Pseudomonas aeruginosa*
ESBL	Extended spectrum beta-lactamase
GRE	Gentamicin-resistant *Enterobacterales*
HAI	Healthcare-associated infection
HCF	Healthcare facility
HCW	Healthcare worker
HICWA	Healthcare Infection Council of Western Australia (Executive group)
HSS	Health Support Services
iCM	iSOFT Clinical Manager
ICNet	Infection Control Clinical Surveillance Software
IPC	Infection prevention and control
IPPSU	Infection Prevention Policy and Surveillance Unit
MAG	Micro-alert Governance (Group)
Micro-alert	Electronic flag in the webPAS system used for multi-resistant organisms
MRGNB	Multi-resistant Gram-negative bacteria
MRSA	Methicillin-resistant *Staphylococcus aureus*
PAS	Patient Administration System
VRE	Vancomycin-resistant enterococci
WAMRO	Western Australia Multi-Resistant Organism (Expert Advisory Group)
webPAS	Web Patient Administration System

2. Purpose

The purpose of this document is to provide information on the use of the micro-alert system for infection prevention and control (IPC) staff in Western Australian (WA) public hospitals.

3. Introduction

Multi-resistant organisms (MROs) are microorganisms, including bacteria and fungi that have developed resistance to multiple classes of antimicrobials. They pose a serious threat to public health worldwide. In healthcare facilities (HCFs), MROs are associated with increased morbidity and mortality in vulnerable patients who may acquire a healthcare associated infection (HAI) with an MRO that will have limited treatment options.

MROs can spread readily in HCFs due to the exposure of a high-density, high-acuity patient population to extensive antimicrobial use, frequent contact with healthcare workers (HCWs) and contamination of the environment [1].

Patients may be infected or colonised i.e. have asymptomatic carriage with an MRO and both are a potential source of transmission to other patients. If the MRO status of a patient is known prior to, or during a hospital admission, there are measures that can be taken by HCWs to prevent transmission of that MRO to other patients and also reduce the risk of the patient who is colonised developing an infection.

The assignment of micro-alerts on the WA patient administration system (PAS) commenced in 1981 to enable the MRO status of persons, or their contacts, to be known to relevant HCWs and therefore ensure appropriate infection prevention strategies were implemented. Micro-alerts should be assigned as soon as possible once the MRO is confirmed.

Micro-alerts should also be used as a clinical flag, to guide medical management and ensure appropriate antimicrobial prescribing when required. Medical staff need to be informed of the micro-alert system and how to access relevant information. The current PAS used in public hospitals is web Patient Administration System known *as* webPAS.

At no time shall a patient's micro-alert status interfere with the admission, transfer, or provision of healthcare in any healthcare facility.

The following MROs are micro-alerted on the WA webPAS:

- Candida auris (C. auris)
- Carbapenemase-producing organisms (CPO) that include:
    - carbapenemase-producing *Enterobacterales* (CPE)
    - carbapenemase-producing *Acinetobacter baumanii* complex (CPAB)
    - carbapenemase-producing *Pseudomonas aeruginosa* (CPPA)

- Extended-spectrum beta-lactamase (ESBL) producing Gram-negative bacteria and/or Gentamicin-resistant Enterobacterales (GRE)
- Methicillin-resistant Staphylococcus aureus (MRSA)
- Vancomycin-resistant enterococci (VRE).

4. Requirements (of the Guideline)

4.1 Governance

- The Western Australian Multi-resistant Organism (WAMRO) Expert Advisory Group (EAG) provides advice on the state-wide response to MROs. This group also identifies the MROs that require a micro-alert and endorses over-arching policy and guidelines for the management of these MROs.
- Factors considered by WAMRO in deciding which MROs require a micro-alert include those that are associated with a demonstrated increase in transmissibility within and between HCFs, increased virulence and/or adverse outcomes, specific antimicrobial resistance profiles, and the emergence of new MROs.
- The Micro-alert Governance (MAG) group is a sub-group of WAMRO that provides advice on the administration and functionality of micro-alerts on webPAS to ensure the requirements of WAMRO and users of the system are met.
- The Infection Prevention Policy and Surveillance Unit (IPPSU) is the administrative arm for both WAMRO and MAG and ensures any enhancements or request for changes to micro-alerts are discussed with key stakeholders prior to any changes being made to webPAS by Health Support Services (HSS).
- WA health staff are to report issues with the administration of micro-alerts, or requests for enhancements, to IPPSU@health.wa.gov.au.
- Private HCFs cannot access the public webPAS but generally have their own internal micro-alert systems.

4.2 Access to micro-alert function

- Staff are required to apply for personal access to webPAS by completing an Access Request System form (eHFN-030).
- WebPAS coordinators are appointed at each Health Service Provider (HSP), and they implement a ‘no train no access’ policy. Training is available by webPAS technical support teams and on-line packages. Types of access are:
    - view only access: the micro-alert status of patients can be viewed but no changes to the alert can be made, and no new alerts added
    - full access: able to add and clear micro-alerts.

- Full access to webPAS for micro-alerts is restricted to IPC staff and designated medical scientists / laboratory staff.
- Administrative staff do not add or clear micro-alerts unless there are exceptional circumstances and only under the direction of IPC staff, clinical microbiologists and /or infectious diseases physicians.

4.3 Description

- Micro-alerts are accessed and viewed through webPAS. This patient administration system is a database that contains the names, unique medical record numbers (UMRN) and admission/discharge information of patients presenting at public hospitals.
- Micro-alerts are assigned on webPAS by the electronic tagging of the patient's UMRN with a MRO specific code for those people who have been identified as MRO-positive (infection or colonisation) and their contacts (Refer to Section 3 and Appendix 1).
- Micro-alert data stored on webPAS includes:
    - the micro-alert code
    - a descriptor and the date the micro-alert was activated or cleared
    - the name of the hospital initiating the alert
    - the health employee (HE) number of the person who has entered the information.
- The micro-alerts placed on webPAS can also be viewed on the printed patient labels for medical records. The micro-alerts also feed downstream into the iSOFT Clinical Manager (iCM) system and the ICNet Infection Prevention Module allowing all HCWs providing clinical care to view the micro-alert code of a patient on iCM and ICNet. The code can be viewed on both the home and summary pages of iCM (refer to Figures 1, 2 and 3. NB: fictitious data used).

Figure 1 iCM patient home page

Note: if a patient has a medical alert, the micro-alert code(s) may not be visible in the header and will read *Micro-alert exists*. The code and activation date can be viewed on the 'summary page'.

Figure 2 iCM patient summary page

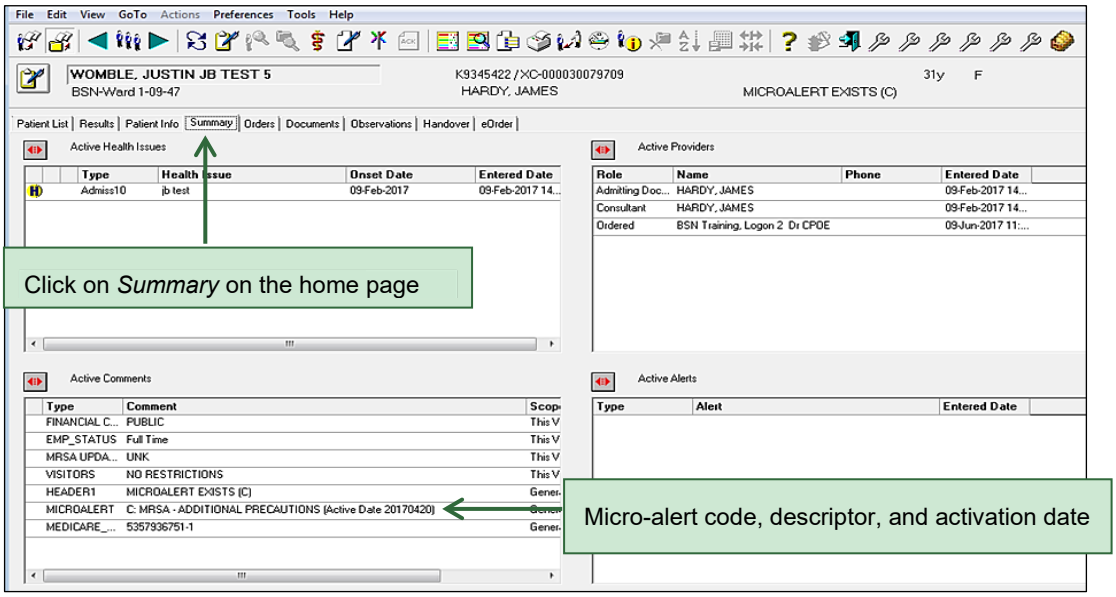
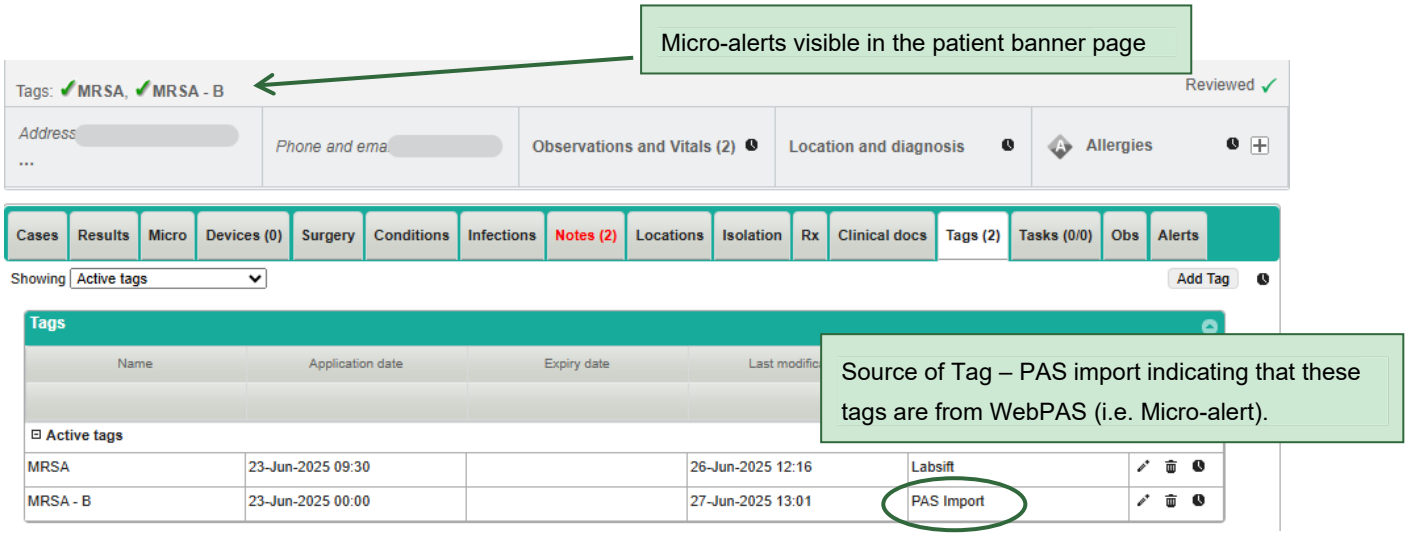


Figure 3 ICNet patient banner and tags tab



4.4 Micro-alert codes

- The micro-alert codes and management of MROs are described in the WA Department of Health Mandatory Policy MP 0177/23 *Screening and Management of Multi-resistant Organisms in Healthcare Facilities Policy* and mandated *Screening and Management of Multi-resistant Organisms in Healthcare Facilities Standard*.
- MRO specific codes and the descriptor on webPAS are summarised in Appendix 1.

4.4.1 Global codes

- Global micro-alert codes are defined as codes that are viewed on webPAS in all public HCFs.
- All positive patients (infection or colonisation) of *C.auris,* CPO, MRSA, or VRE, and their contacts are assigned a global micro-alert (Refer to Appendix 1).
- WebPAS is programmed to automatically remove the following codes one year after the date of activation:
    - W (MRSA contact)
    - F (VRE contact)
    - Y (ESBL and/or GRE).
- WebPAS is programmed to automatically remove micro-alert H (CPO contact) five years from activation.

4.4.2 Restricted code - micro-alert Y

- Micro-alert Y has been a restricted code for ESBL producing Gram-negative bacteria and/or GRE. It is only assigned at King Edward Memorial Hospital (KEMH), Perth Children's Hospital (PCH) and Fiona Stanley Hospital (FSH) where neonates in high-level intensive care units are at higher risk of a ESBL and/or GRE bloodstream infection. Mothers of neonates identified with ESBL and/or GRE are also assigned an alert due to their close contact with neonates.
- Micro-alert Y code placed at KEMH, PCH and FSH are broadcast and viewed globally on webPAS, ICNet and iCM due to the design of these systems. It is not possible to suppress this micro-alert Y at other sites. A patient with a micro-alert Y may present at other hospitals and therefore it is important that an explanation and information on management of ESBL and/or GRE and micro-alert Y is provided in IPC hospital policy.

4.4.3 Available codes

- These are global codes that can be activated in response to a threat from new emerging MROs.
- There are eleven codes (A, D, E, L, M, N, P, Q, R, S, T,) that are available for use. Activation of new codes will only be implemented via the IPPSU following endorsement by WAMRO.

4.5 Notification of MROs

- It is essential that IPC staff utilise ICNet to review all notifications of all positive *C. auris,* CPO, MRSA, ESBL/GRE and VRE isolates from specimens obtained at their facility, including outpatient and emergency departments.
- ICNet is automated to notify IPC staff of all organisms of concern and 'tags' have been created for all micro-alerted MROs.
- HCFs are to assign micro-alerts on webPAS following laboratory confirmation of the MRO.
- Infection control precautions (i.e contact precautions) are be initiated when a possible MRO is notified to the IPC department by PathWest.

4.6 MRSA classification

In July 2024, routine typing of all MRSA isolates was discontinued due to the increasing volume of MRSA isolates being received and the significant resource requirements of the current typing process. PathWest will continue to test a representative sample of MRSA isolates to maintain ongoing statewide genomic surveillance of MRSA strains.

Classification of MRSA cases for the micro-alert system will now be based on their susceptibility to ciprofloxacin. Micro-alerts are to be applied as follows:

- micro-alert B - ciprofloxacin susceptible
- micro-alert C - ciprofloxacin resistant

IPC staff will continue to be automatically notified of MRSA isolates via ICNet. Each case must be reviewed, and the micro-alert applied based on the ciprofloxacin susceptibility. The following is the standard MRSA comment from PathWest Laboratory Medicine:

Ciprofloxacin Resistant	Ciprofloxacin Susceptible
This isolate is a methicillin-resistant *Staphylococcus aureus* (MRSA) which is resistant to all cephalosporins and penicillins including flucloxacillin. This isolate has the potential to cause outbreaks in hospitals. If infection control advice is needed, please contact an Infection Prevention and Control practitioner or Clinical Microbiologist.	This isolate is a methicillin-resistant *Staphylococcus aureus* (MRSA) which is resistant to all cephalosporins and penicillins including flucloxacillin. This organism may have infection control implications. If infection control advice is needed, please contact an Infection Prevention and Control practitioner or Clinical Microbiologist.

4.7 Identification of MRO contacts

Identifying MRO contacts for screening and/or micro-alerting requires tracking the location of MRO-positive patients during an admission and identifying patients that have shared a room, bathroom or toilet with them as per definitions in the *MP 0177/23 Screening and Management of Multi-resistant Organisms in Healthcare Facilities Policy*.

The use of webPAS and ICNet for electronic contact tracing is recommended due to the potential for multiple internal transfers of patients during an admission. WebPAS coordinators and ICNet Super Users can provide further information.

4.8 Activation and clearance of micro-alerts

4.8.1 Activation

- Prior to activating an alert, it is essential that IPC staff ensure that the isolate is a laboratory-confirmed MRO approved for micro-alerting.
- The micro-alert code is assigned on webPAS by staff at the hospital where the specimen was identified, including from emergency and outpatient departments. PathWest provide support for adding micro-alert G, H, J, and V alerts for MROs identified in the private sector.
- Automatic upload of micro-alert B and C identified in the private sector will be uploaded weekly by IPPSU. Any MRSAs identified in public patients that have not been micro-alerted will be included in the automatic upload.
- The date of collection of the first specimen that resulted in a positive MRO result (infection or colonisation) is to be recorded as the date activated.
- With the activation of an alert, when WebPAS data is transferred into ICNet the alert will automatically create a tag on the ICNet patient record.

4.8.2 Inactive status and clearance

- There a is no requirement for a micro-alert to be made inactive before a clearance date is entered. The **'Date Inactive'** field is not to be used.
- Patients can be cleared of a micro-alert only when clearance criteria outlined in MP 0177/23 *Screening and Management of Multi-resistant Organisms in Healthcare Facilities Policy* and the *mandated* *Screening and Management of Multi-resistant Organisms in Healthcare Facilities* Standard is met. This applies to MRSA or VRE positive patients and contacts, and CPO and *C. auris* contacts.
- There is currently no clearance policy for C. *auris*, CPO and ESBL/GRE positive patients.
- The date of clearance is to be entered in the **'End Date' (date cleared)** field on the '**Update Micro-alert'** page in webPAS. This will result in the micro-alert code being removed from global view on webPAS and iCM. The tag will automatically be inactivated in ICNet when the end date is utilised.

- IPC staff can still view the history and date cleared on the '**Update'** page in webPAS
- the date the micro-alert is cleared will show in the '**Inactive/Exp End Date'** field on the micro-alert home page
- clearance history is not shown on iCM.

- Private hospital staff who have obtained clearance screening swabs for patient contacts for any MRO or have undertaken clearance screening of previously positive MRSA and VRE patients can send copies of the results to IPPSU@health.wa.gov.au to enable removal of patient micro-alerts.

4.8.3 Deletions

- A micro-alert is not to be deleted from webPAS even if it has been created in error e.g. wrong patient or the final laboratory results confirm the isolate is not a significant MRO that requires a micro-alert. If a micro-alert is created in error insert the same date in **- 'End Date'** field as '**Date Activated'** field, then click the '**Update'** button. This process will ensure the alert icon disappears from the Patient Banner in WebPAS, iCM, and tag in ICNet will expire.

4.9 Informing patients of their MRO and micro-alert status

- Transparent management of personal information and open communication between the health service provider and health consumer are important for balancing the dual goals of providing the flow of information to HCWs who need to know and steps to meet patient privacy requirements.
- The MRO policy requires that a person who is identified as MRO-positive and micro-alerted at a hospital is to receive written notification of their MRO status and be provided with an information sheet on the MRO isolated.
- When a MRO contact is identified and discharged prior to notification and completion of screening it is recommended that hospitals provide written information in a letter.
- Standardised MRO positive case letters, contact letters and consumer resources are available on the IPPSU tools and resource page.

5. Relevant Legislation

In WA, reporting of *C.auris*, CPE, CPPA, CPAB, MRSA and VRE is a mandatory requirement pursuant to Part 9, Division 2 *Public Health Act 2016.*

6. Guideline Contact

Enquiries relating to this Guideline may be directed to:
Infection Prevention, Policy and Surveillance Unit (IPPSU)
Directorate: Communicable Disease Control Directorate
Email: IPPSU@health.wa.gov.au

7. Document Control

Guideline number	Version	Approval	Published	Review Date	Amendments
0017	V.1	Dr Jelena Maticevic	10/12/2023	December 2026	Transfer to Guideline of existing document. Updated to reflect revision of the micro-Y alert and micro-alert status, updated with ICNet references
0017	V1.2	Dr Paul Armstrong	13/12/2024	December 2027	Updated MRSA classification with minor amendments.
0017	V1.3	Dr Paul Armstrong	9/01/2026	January 2029	Appendix 1 updated-inclusion of *vanM* as micro-alert V and that micro-alerts are to be initiated only on laboratory confirmation of the MRO.

8. Approval

Approved by	Dr Jelena Maticevic, A/Director, Communicable Disease Control Directorate, Department of Health
Approval date	10/12/2023

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10. Appendices

Appendix 1 Micro-alert codes and descriptions

MRO and micro-alert code	Definition
Candida auris	
Micro-alert J	**Positive status:** laboratory confirmed *C.auris*
Micro-alert K	**Contact status:** any person who has shared a patient room, bathroom or toilet facility with a known positive *C. auris* patient (infection or colonisation) within the period 28 days prior to first isolation of *C. auris* and for whom screening has not been completed prior to discharge.
Carbapenemase-producing organisms	
Micro-alert G	**Positive status:** laboratory confirmed CPO with confirmed presence of a carbapenemase producing enzyme, including but not limited to, KPC, NDM, VIM, OXA and IMP.
Micro-alert H	**Contact status:** any person who has shared a patient room, bathroom, or toilet facility with a CPO positive patient prior to implementation of contact precautions and for whom screening has not been completed prior to discharge. Micro-alert H will automatically drop off via webPAS five years from activation.
Methicillin-resistant *Staphylococcus aureus*	
Micro-alert B	**Positive status:** laboratory confirmed ciprofloxacin susceptible MRSA.
Micro-alert C	**Positive status:** laboratory confirmed ciprofloxacin resistant MRSA.
Micro-alert W	**Contact status:** any person who has shared a patient room with a micro-alert C positive patient prior to the patient having contact precautions initiated and for whom screening has not been undertaken or completed prior to discharge. Micro-alert W will automatically drop off via webPAS at one year from activation.
Vancomycin-resistant enterococci	
Micro-alert V	**Positive status:** laboratory confirmed vancomycin resistant *Enterococcus faecalis* and *Enterococcus faecium* (*vanA*, *vanB*, and *vanM*).
Micro-alert F	**Contact status**: any patient who has shared a patient room, bathroom or toilet facility with a VRE positive patient prior to implementation of contact precautions and for whom screening has not been completed prior to discharge. Micro-alert F will automatically drop off via webPAS at one year from activation.
Extended-spectrum beta-lactamase (ESBL) producing gram-negative bacteria and/or gentamicin resistant *Enterobacterales* (GRE)	
Micro-alert Y	This is a restricted code for ESBL and/or GRE and is only assigned at KEMH, PCH and FSH. Micro-alert Y will automatically drop off via WebPAS at one year from activation.

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